

35253/B

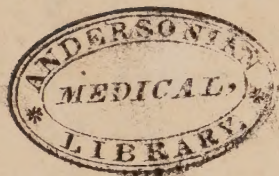
VOL II

35253/B vol II

MODERN IMPROVEMENTS

IN THE

P R A C T I C E



O F

S U R G E R Y.

BY HENRY MANNING, M.D.

AUTHOR of the TREATISE ON THE DISEASES
OF WOMEN.

L O N D O N :

Printed for G. ROBINSON, in Pater-Noster-Row;
and J. MURRAY, in Fleet-Street.

M D C C L X X X .

71406



BY HENRY MANLY, M.D.

AUTHOR OF THE TREATISE ON THE DISEASES
OF WOMEN

LONDON:

Printed by C. Robinson, in New-Street, W.
and J. Murray, in Fleet-Street.

MDCCLXXX.

C O N T E N T S.

O F Inflammation	_____	Page 1
Of Suppuration	_____	13
Of Abscesses	— — — — —	22
Of Gangrene or Mortification	— — — — —	29
Of Ulcers	— — — — —	37
The Simple purulent Ulcer	— — — — —	42
Of the simple vitiated Ulcer	— — — — —	50
Of the Fungous Ulcer	— — — — —	56
Of the Sinous Ulcer	— — — — —	61
Of the Callous Ulcer	— — — — —	66
Of the Carious Ulcer	— — — — —	69
Of the Cancerous Ulcer	— — — — —	85
Of the Cutaneous Ulcer	— — — — —	97
Of the Venereal Ulcer	— — — — —	113
Of the Scorbutic Ulcer	— — — — —	119
Of Gun-Shot Wounds	— — — — —	123
Of Injuries of the Head from external Violence	— — — — —	128
Of the Cataract	— — — — —	136
Of the Fistula Lachrymalis	— — — — —	156
Of the Polypus of the Nose	— — — — —	199
Of Lithotomy	— — — — —	209
Of the Manner of performing the Operation of Lithotomy on Women	— — — — —	225
Of the Diseases of the Urethra	— — — — —	229
Of		

C O N T E N T S.

Of Ruptures	—	Page 238
—— the Bubonocoele	—	ibid
Of the Hernia Femoralis	—	263
Of the Congenial Hernia	—	267
Of the Hernia Ventralis	—	275
Of the Hydrocele in general	—	277
Of the Encysted Hydrocele of the Tunica Communis		291
Of the Hydrocele of the Tunica Vaginalis Testis		295
Of the Sarcocoele	—	313
Of the Cancer of the Scrotum	—	323
Of the Fistula in Ano	—	326
Of a Mortification of the Toes and Feet		381
The Palsy of the Lower Extremities	—	393
Of White Swellings of the Joints		411

MODERN

MODERN IMPROVEMENTS

I N

S U R G E R Y.

Of I N F L A M M A T I O N.

RESPECTING the proximate cause of inflammation, various opinions have been entertained, which, in proportion to the authority of the writers by whom they were invented, have more or less influenced practice in the cure of the disease. During the prevalence of the Boerhaavian theory, that inflammation was produced *ab errore loci*, or by a larger particle of the blood being admitted into the cavity of an artery through which it could not pass, the cure was generally prosecuted by resolving and attenuating medicines. At present, however, the most common opinion is, that the proximate cause of inflammation consists in an increased action of the vessels of any

part, accompanied with a spasm of the arterial system.

The proper treatment of inflammations in general will be best exemplified by that of the phlegmon, a name commonly applied to a circumscribed tumor, attended with heat, redness, tension, and a throbbing pain.

In the treatment of this local complaint, the principal object in view, for the most part, is to effect its resolution, which is by far the safest and most speedy method of cure. At, or soon after, the commencement of a phlegmon, when the symptoms are not so violent as to have affected the general system, topical remedies alone often answer the purpose of resolution. But when, on the contrary, the inflammation runs high, with symptoms of fever, it becomes necessary also to pay attention to those circumstances.

The most common practice has been, to have recourse to warm fomentations and cataplasms; but as warm emollient applications of all kinds have the most powerful influence in promoting suppuration, the use of such remedies, while the resolution of swellings is practicable, seems to be founded in impropriety.

When the resolution of the tumour is to be attempted, the first object is the removal of all such exciting causes of the disorder, as may hap-

pen to present themselves; such as extraneous bodies in wounds; pieces of fractured bones; luxations, &c.

Of all the various applications to the inflamed part, those of a sedative nature are apparently the most efficacious; and next to these, emollients. Of the former kind are considered all the preparations of lead dissolved in vinegar.

The vegetable acid by itself is likewise supposed to act in the same manner. As emollients, all the bland expressed oils are often used with advantage; as are also ointments of a soft consistence, made with any of those and pure wax.

Respecting the use of sedative applications, however, in external inflammation, it is not to be understood as if the whole class of medicines, which, in different circumstances, are found to be of that nature, were universally proper. For instance, opium, though one of the most powerful sedatives, yet as its external application to the body is always attended with some degree of irritation, will probably never be admitted as a general remedy in those disorders, however useful it may have sometimes been found in particular cases.

A judicious writer (Mr. Bell) has observed, that warm emollient fomentations likewise, though

4 MODERN PRACTICE

doubtless powerful sedatives, as naturally tending to remove tension and pain, more effectually, perhaps, than any other remedy with which we are acquainted, yet when the intention is to resolve inflamed tumours, such applications are very improper; and of this he is convinced from long experience. He remarks, that they constantly tend either to bring swellings of this nature to suppuration, which might otherwise, probably, have been dissolved; or, when not attended with that effect, occasion such a relaxed state of the parts, as renders a complete removal of the disorder exceedingly tedious.

Upon a proper examination of all the different articles reputed to be of a sedative nature, similar exceptions to their use in inflammatory cases, might perhaps be found to the greater part of them. From the experience of many practitioners, however, no such reasons can be alledged against the use of lead and its preparations in such cases. On the contrary, they seem to be the most efficacious discutients in inflamed tumours.

The vegetable acids, as has been already observed, are also remarkable for their virtue in producing the same effect. Mr. Goulard, in his dissertation upon the external use of the preparations of lead, recommends them as almost equally

ly proper in every stage of inflammation. Even when tumours have come to a full suppuration, a proper use, he says, of his extractum saturni renders it almost always unnecessary to open them: and this effect he supposes to be produced, not by its repelling quality, for he will not admit that it is possessed of such, but by its occasioning an exudation of the contained matter.

He likewise mentions the same remedy as a proper application in every case of gangrene. Mr. Bell however informs us, that from his own experience of the preparations of lead, he cannot take upon him to recommend them in either of those cases. He has made trial of them in gangrenes, but without any evident effect.

From the known deleterious effects of lead, when introduced into the system, an objection has been raised by some authors against a free use of the preparations of lead, even externally applied. But so far as Mr. Bell has had occasion to try the preparations of lead, and particularly in many cases of burns, he has known the greater part of the surface of the body covered with them for days, nay even for weeks together; nor does he recollect one instance of any disagreeable symptom resulting from them.

6 MODERN PRACTICE

Of all the preparations of lead for external use; the *saccharum saturni* is perhaps equal, if not superior to any; as it possesses all the advantages of the others, with this difference, that in respect of it, we are much more certain of the exact strength of the preparation, than we ever can be with any other. For though in the *extrait de saturn* of Goulard, as likewise in the *acetum lythargites* of our dispensatories, which are both very nearly the same, we may ascertain with exactness the quantity of lead employed in the vinegar, yet we never can, except by crystallisation, know exactly, or even nearly, how much of the former the menstruum may have dissolved, as that must depend on a variety of accidents; particularly on the strength of the acid, and the exact degree of heat employed, which are circumstances not always in our power to regulate with precision. For these reasons, the salt, or *fugar* of lead, as it is called, should always be preferred for external use.

The best mode of applying the remedy seems to be in the form of a watery solution; in the preparation of which the following proportions may, in general, answer sufficiently well.

R Sacchar. Saturn. unc. fs.

Solve in acet. pur. unc. iv.

Et adde aq. fontan. distillat. lib. ii.

The

The addition of vinegar renders the solution more complete than it otherwise would be ; besides, that without it, a considerable portion of the lead generally separates, and falls to the bottom.

In making use of this solution, in cases of inflammation, the best way is to apply it made into a cataplasm with crumb of bread, so that the part affected may be kept constantly moist. But when the inflamed part is so tender and painful, as not easily to bear the weight of a poultice, which is frequently the case, pieces of soft linen, moistened with the solution, answer the purpose tolerably well. Whether recourse be had to the cataplasm or linen, they should always be applied cold, or, at least, with no greater degree of warmth than is necessary for preventing pain or uneasiness to the patient. They ought to be kept constantly at the part, and be renewed before they become stiff or hard.

Among the remedies recommended for external use, in cases of inflammation, were emollients. These, when the tension and irritation on the skin are considerable, are often attended with great advantage; the parts affected being, in such a state of the disorder, gently rubbed over with any of the mild expressed oils, two or three times a-day, the tension, irritation, and pain, are

thereby often much relieved, and the discussion of the tumour promoted.

Mr. Bell observes, that in every case of inflammation emollient applications would afford some relief; but as the preparations of lead already recommended prove, in all such disorders, still more advantageous; and as unguents of every kind tend considerably to blunt the action of lead, those two sets of remedies should, as seldom as possible, be allowed to interfere with each other. Emollients should accordingly never be prescribed, unless when the circumstances already mentioned, of irritation, tension, and pain, are so considerable as to render their application absolutely necessary.

Unctuous substances have also been condemned in such cases upon a different principle, as tending to stop the pores, and consequently to obstruct the perspiration. It is, however, not probable that they could in this way prove very hurtful in preventing the resolution of inflammation; which must always, it is imagined, be effected in a very different manner than by perspiration.

When the inflamed part is not very tender, nor lies deep, applications of the vegetable acid are often employed with considerable advantage. The most effectual manner of using it seems to be

be by way of cataplasm, made with the strongest vinegar and crumb of bread. In such cases Mr. Bell has sometimes thought, that an alternate use of this remedy, with the saturnine solution, has produced more beneficial effects, than are commonly observed from a continued course of any one of them.

While those applications are employed, bleeding with leeches, or cupping and scarifying, as near as possible to the part affected, is generally of very great service, and should never be omitted in any local inflammation.

In all such cases, the whole body, but especially the diseased part, should be preserved as free as possible from every kind of motion. A low cooling diet, with a total abstinence from spirituous and fermented liquors, is also necessary.

In slight cases of inflammation, a due perseverance in the practice abovementioned will usually be found sufficient. But when there is a full, hard, or quick pulse, with other symptoms of fever, general blood-letting always becomes necessary; the quantity taken away being determined by the violence of the disorder, and the age and strength of the patient. The use of gentle laxatives, likewise, with cooling and diaphoretic medicines, is always attended with good effects.

These

These evacuations being premised, the next object of importance is to procure ease and rest to the patient; which, in inflammatory cases, are often of more service than any other circumstance. The most effectual remedy for this purpose is opium, which, when pain and irritation are considerable, as often happens in extensive inflammations, should never be omitted. In large wounds, especially after amputations, and other capital operations, and in punctures of all kinds, large doses of opium, are attended with remarkable good effects. In all such cases, however, it is necessary, as has been observed, that the medicine be administered in large doses; otherwise, instead of proving serviceable, it seems rather to have the contrary effect; a circumstance, which Mr. Bell observes, is perhaps the chief reason for opiates in general having been condemned in every case of inflammation.

By a proper attention to the different circumstances abovementioned, in the course of three or four days, and sometimes in a shorter space of time, resolution of the tumour will generally begin to take place. At least, before the end of that period, it may, for the most part, be known how the disorder will terminate. If the heat, pain, and other symptoms abate, and especially if the tumour begin to decrease, without the concurrence

currence of any gangrenous appearances, we may be almost certain, that, by a continuance of the same method of cure, a total resolution will in time be effected.

But, on the contrary, if the symptoms rather increase, and especially if the tumour becomes larger, and somewhat soft, with an increase of throbbing pain, we may conclude that suppuration will follow. In this case we should immediately desist from such applications as were used while a cure by resolution was thought practicable; and endeavour by all means to assist nature in the formation of pus, or what is called maturation of the tumour.

For this reason, in every case of inflammation, the different evacuations, especially that of blood-letting, which may have been adviseable while the swelling was attempted to be dissipated, should never be carried a greater length than may be absolutely necessary for moderating the febrile symptoms. Because by too much reducing the strength, and a suppuration afterwards taking place, its progress is rendered much more slow and uncertain, than it would have been, had due attention been paid to those evacuations; nor will the patient be afterwards so able to bear the discharge that must ensue upon opening the abscess, if the quantity be considerable.

Notwith-

Notwithstanding it has been remarked above, that if, in general, in the course of three or four days, there does not occur some appearances of resolution, suppuration will most probably take place ; and that consequently a change of treatment becomes necessary ; yet this, it must be observed, is only to be taken in a limited sense. For the time of desisting from one mode of treatment and commencing the other, must always depend very much on the seat of the inflammation ; such disorders being in some parts much more apt to terminate in a speedy suppuration than in others.

Thus in the cellular membrane, and in different soft parts, inflammatory disorders of all kinds terminate much more readily than when any of the tough membranous parts is affected. Hence, in the coats of the eye and of the testicles, very violent inflammations often continue many days, nay, even weeks, without either abating in the symptoms, or ending in suppuration. In such cases, therefore, we need apprehend no bad consequence from continuing the discutient applications for a much longer time than what, in general, would otherwise be proper. Nor should we ever be deterred from using them, unless either an evident suppuration has taken place, or there appears, from the violence
of

of the symptoms, a certain danger of gangrene, or of some incurable obstruction. In which event, doubtless, we should always endeavour to procure the suppuration of the tumour.

Of S U P P U R A T I O N.

BY the term suppuration, in general, is understood that process, by which the contents of tumours and ulcers are converted into a whitish, thick, opaque, somewhat fetid matter named pus. This, by many, has been considered as the effect of a natural exertion of the system; but it is certain, that in all such cases, the progress of maturation may be greatly assisted by art.

Different opinions have been entertained concerning the formation of pus. Boerhaave, Platner, and many other writers, have supposed it to consist in a dissolution of the blood-vessels, nerves, muscles, and other solids, in the fluids of the parts in which inflammatory tumours occur. Others have imagined purulent matter to be formed in the blood; and that it is secreted, in
- its

its complete state, into abscesses, wounds, and ulcers.

Mr. Bell observes, that the former of these opinions seems sufficiently confuted from this consideration, that very extensive wounds and ulcers continue often a great length of time, without being attended with any loss of substance; which they necessarily always would be, if their several discharges consisted in a dissolution of the solids of the parts on which they were situated. Issues likewise afford instances of the same kind, yielding, for a number of years, even a daily discharge of pus, without producing any evident alteration in the state of the solids.

The other opinion, it is remarked, has probably arisen from abscesses being sometimes observed to form suddenly, and without any evident previous inflammation.

Antecedent, however, to the formation of pus, in any part, it is probable, that if due attention was given, some degree of inflammation would be always observed. But as inflammation, in many cases, occurs in only a very slight degree, and without being attended with much pain, it may often have proceeded to the state of suppuration, without being sooner observed by the patient; and this, we know, in internal abscesses particularly, is not unfrequently the case.

case. We are told, indeed, says Mr. Bell, of very quick translations of matter, from one part of the body to another ; but if such instances do ever occur without the intervention of inflammation, which however appears to be questionable ; yet, still, it is no material objection, as such cases can never be considered in any other light, than as particular, and very unusual exertions of the system.

It may also be remarked, that if purulent matter frequently existed in the blood, as it doubtless would do, if the opinion now under consideration was well founded, in some cases, at least, it would surely have been liable to detection ; but no matter of that kind has, it is imagined, ever yet been discovered in it. Such pus too, as is found in wounds and ulcers, if deposited, completely formed from the blood, would not at first appear thin and serous, as it always does.

The most probable opinion hitherto advanced, respecting the formation of pus, is, continues the abovementioned author, that it is a change produced by a certain degree of fermentation, upon the serous part of the blood, after its secretion into the cavities of ulcers and abscesses ; and this in consequence either of the natural heat of the part, or of heat artificially applied.

That

That it is the serum only of blood which is proper for the formation of pus, and that it is produced by a certain degree of heat, was first rendered exceedingly probable by an experiment made by Sir John Pringle; and was afterwards confirmed by several others of the same nature, made by Mr. Gaber, and related by him in the second volume of *Acta Taurinensia*.

Sir John Pringle found that pure serum, kept some days in a furnace, regulated to the human heat, after becoming turbid, dropped a white purulent sediment. The crassamentum of the blood, in the same space of time, and degree of heat, changed from a deep crimson, to a dark livid colour; so that when any part of it was mixed with water, it appeared of a tawny hue. Serum, digested with a few red globules, and in the same circumstances, was of the same colour.

When the suppuration of an inflamed part becomes the object in view, all the remedies that are adapted to resolution must immediately be laid aside. No farther evacuations are then to be admitted; and if the patient has already been much weakened, a full diet, and a proportion of wine may be necessary. For though a very violent degree of inflammation is always unfavourable to suppuration, as tending either to gangrene, or to propel into the cellular membrane,
which

which is generally the seat of abscesses, a quantity of red globules with the serum of the blood, the latter of which only should be extravasated for the purpose of forming good pus; yet, in order to have a due quantity of serum secreted, for the purpose of suppuration, and at the same time, to have its fermentation properly carried on, the inflammatory symptoms must never be allowed to fall suddenly; otherwise an abscess of very ill digested matter, as it is termed, will most probably be the consequence. The patient should therefore be kept in a proper medium, not allowed to live so fully as to run any risk of raising the inflammation too much; nor to be so reduced, by evacuations and a low diet, as to induce the contrary extreme.

Having, in this manner, endeavoured to procure a discharge into the cellular membrane of serum, proper for the formation of pus, the next circumstance that demands our attention is, that a due fermentation be excited and maintained, so that the advancement of suppuration may regularly proceed.

This end is chiefly obtained by the use of such applications as tend to preserve a proper and constant degree of heat in the part. For unless a due degree of heat be applied and continued, the mere extravasation of serum will never pro-

duce pus. The just degree of heat for promoting suppuration is perhaps not easily to be determined ; but the more considerable it is, at least to a certain extent, the more quickly, it is probable, pus will be formed. On this account we should be particularly attentive to the preservation of a due degree of heat in every inflamed part, but more especially in situations very distant from the heart, where artificial heat is most wanted, and where, by a proper application of it, almost every tumour, though situated on the extremities, might probably be induced to suppurate in the same space of time with those in other parts.

The method usually employed for the application of heat to an inflamed part, is by means of warm fomentations and cataplasms ; and when these are regularly and frequently renewed, nothing, it is probable, could more effectually answer the purpose. But, in the ordinary manner in which they are applied, by the cataplasms being renewed only once, or, at most, twice a-day, they must always, it is reasonably imagined, do more harm than good. For, so soon as their heat is dissipated, the moisture kept up by them, with the evaporation that ensues, must render the part much colder than if it had been only wrapped up in flannel without the use of any such application.

In

In order to receive all the advantages of such remedies, the part affected should be well fomented with flannels pressed out of emollient decoction, applied as warm as the patient can easily bear them, continued at least half an hour at once, and renewed four times a-day. Immediately after the fomentation a large emollient poultice should likewise be applied warm, and renewed every second or third hour at farthest. Of all the forms recommended for this purpose, a common bread and milk poultice, with a proportion of butter or oil, is perhaps the most eligible; as it not only possesses all the advantages of the others, but can always be more easily procured.

Roasted onions, garlic, and other acrid substances, are frequently added to maturing cataplasms. When there is not a due degree of inflammation in the tumour, and when it seems probable that the suppuration would be quickened by an increase of the inflammatory symptoms, the addition of such substances may be of service. But when the stimulants are necessary, a small proportion of strained galbanum, or any of the warm gums, dissolved in the yolk of an egg, and added to such poultices, is not only a more elegant, but more efficacious application. When the inflammation, however, is in a proper degree,

such stimulating substances can never be necessary, and may even do mischief.

In tumours that have little or no inflammation, and which are commonly said to be of a cold nature, as in general they are indolent, and proceed very slowly to suppuration, plasters composed of warm gums are often used with considerable advantage. In such cases they prove serviceable, not only by the stimulus and irritation they excite, but by the heat which they naturally tend to preserve in the part. They become particularly necessary when the patient, by being obliged to go abroad, cannot have cataplasms frequently enough renewed, nor so conveniently applied. But when some such objection does not occur, the latter should always be preferred.

Dry cupping, as it is termed ; that is, cupping without the use of the scarificator, upon, or as near as possible to the part affected, is often employed with advantage, in promoting the suppurating of tumours. It is however adapted only to those in which there is a deficiency of inflammation. But Mr. Bell informs us, that in all tumours of a real indolent nature, and where there is still some probability of a suppuration being produced, he has seldom observed such effects from any other remedy.

When

When matter is completely formed in a tumour, are mission of all the symptoms takes place. The beating pain that before was frequent, now goes off, and the patient complains of a more dull, constant, heavy pain. The tumour points at some particular part, generally near to its middle, where, if the matter is not encysted, or deep seated, a whitish yellow appearance is observed, instead of a deep red that formerly overspread it; and a fluctuation of a fluid underneath is, upon pressure, very evidently felt. Sometimes, indeed, when an abscess is thickly covered with muscular and other parts, and when, from concurring circumstances, there can be little doubt that a very considerable collection of matter is formed, yet the fluctuation cannot be easily distinguished. It does not often happen, however, that matter is so very deeply lodged, as not to be discovered upon proper examination.

Mr. Bell justly observes that this is a circumstance of the greatest consequence in practice, and deserves particular attention. In no part of a surgeon's employment, is experience of greater use to him than in the present; and however simple it may appear, yet nothing more readily distinguishes a man of observation than his being able to detect collections of deep seated matter. Whilst nothing, on the contrary, so materially

affects the character of a surgeon, than his having in such cases, given an erroneous prognostic.

Besides the several local symptoms already enumerated, of the presence of pus, may be mentioned the frequent shiverings to which patients are liable on its first formation. These, however, seldom occur so as to be distinctly observed, unless the collection is considerable, or seated internally in some of the viscera.

Of ABSCESSSES.

IN the treatment of abscesses, it is a general rule not to open them till a thorough suppuration has taken place; because, when laid open long before that period, and while any considerable hardness remains, they commonly prove more troublesome, and seldom heal so kindly.

In some cases, however, it is necessary to deviate from this general rule, and to open them a good deal sooner; particularly in all such critical abscesses as occur in malignant fevers. In the plague likewise, we are commonly advised to open such tumours, so soon as they are tolerably advanced, and not to wait till they are fully matured ;

rated ; as it is found to be of more consequence, for the removal of the original disease, to have a quick discharge of matter produced, than any harm the patient can suffer from a swelling somewhat prematurely laid open.

Such abscesses likewise as are situated on any of the joints, or upon either of the large cavities of the breast or abdomen, and especially when they seem to run deep, should always be opened as soon as the least fluctuation of matter is discovered. For when the resistance is on every side equal, they are as apt to point internally as outwardly ; and a large abscess bursting into either of those cavities especially, is well known most frequently to prove fatal.

Two different methods of opening abscesses have been recommended by chirurgical writers, viz. by caustic, and by incision. To the former, however, it is observed, there are many objections. It is not attended with any superior advantage to a simple incision ; upon a tender inflamed part, it gives much more pain ; it is more slow in its effects, and the surgeon never has the command of it so entirely as to destroy those parts he would choose, and no more. For all the kinds of caustic, notwithstanding the greatest attention, will sometimes spread farther, and penetrate deeper than was either desired or intended.

When tumours are not very large, they are commonly opened by a longitudinal incision with a lancet or scalpel, made so as to terminate at the most depending part of the swelling, and of such a size as may seem sufficient for giving a free discharge to the matter. About two thirds of the length of the tumour, is, in such cases, generally reckoned sufficient.

But when abscesses are of any considerable extent, they are commonly laid open through their whole length; and when the integuments have been greatly stretched, it is advised by many, to remove part of them entirely. Mr. Bell observes, however, that this is a practice, which seldom or perhaps never ought to be followed, there hardly being any abscesses ever so large as to destroy entirely the tone of the parts; and so long as any contractile power remains in a part, there are still hopes of recovering its former dimensions.

The various modes prescribed for opening abscesses by the scalpel, are all of them attended with different inconveniencies; particularly, so soon as an incision is made into a tumour, the whole contained matter is discharged suddenly and at once. By this means, when the collection is considerable, faintings, and other disagreeable symptoms are frequently induced; and what, in all large swellings especially, is constantly at-

tended with very bad effects, a free admission of air is thereby given to a great extent of ulcerated surface.

The bad effects air has on every species of fore are sufficiently known to practitioners; but its influence on a newly opened abscess is particularly remarkable. It first occasions a total change in the nature of the matter, from, perhaps, a very laudable pus, to a thin ill digested sanies; and afterwards brings on a quickness of pulse, weakening sweats, and other symptoms of hectic fever, which, in a short time, generally ends in the patient's death, or in the production of a real phthisis, which at last proves fatal.

The greatest caution therefore is necessary for preventing, as much as possible, the admission of air into an abscess. This is effectually done by opening it with a seton or cord, instead of either the caustic or scalpel; a method of discharging the contents of tumours, attended with every advantage of that by incision. It also empties the swellings, of whatever size they may be, not suddenly, but very gradually; it effectually prevents a free admission of air; it is not commonly attended with near so much pain or inflammation; nor is the cicatrix occasioned by it ever inconvenient or unseemly, which it frequently is, after a large incision.

The

The opening of abscesses by the introduction of a seton, has been mentioned by different authors, and, in small collections of matter, has been frequently practised by many surgeons; but Mr. Bell informs us, that the practice was probably never carried to such an extent as it has been at Edinburgh within these last twenty years.

For introducing the seton, a curved director is used in the following manner. An opening, sufficiently large for the cord intended to be inserted, being made with a lancet in the superior part of the abscess, the director, threaded with a cord of candlewick-cotton, or of soft silk, proportioned in greatness to the size of the tumour, is then to be introduced, and its point to be pricked downwards till it is felt externally, exactly opposite to the most depending part of the swelling. The director being kept firm by an assistant, an incision is to be made with a scalpel upon its under extremity, of a length somewhat more considerable than the opening made by the lancet; for when this circumstance is not attended to, and when of course the under orifice is made no larger than the upper, the matter is apt to transude above, which always proves inconvenient to the patient; but which in this manner is very easily avoided. The director is then to be drawn downwards, with so much of the cord

as to leave two or three inches of it hanging out at the lower orifice. In order to cause the cotton to run easily on its first introduction, and likewise at the different after dressings, so much of it as is to be used at the time should be well rubbed over with some emollient ointment.

In about twenty-four hours from its introduction, the cord may be moved, and so much of it drawn downwards, as to allow all that part of it being cut off which had been used the preceding day. In this manner so much of it is to be moved daily, so long as from circumstances it may appear necessary.

A regular and slow discharge of the matter is thus produced ; the sides of the abscess are thereby allowed to contract gradually ; and a slight inflammation being kept upon their surfaces by the friction of the cord, they are often from that circumstance brought to unite and adhere firmly to one another, much sooner than they otherwise would do. As the discharge diminishes in quantity, so the size of the seton should be gradually diminished ; and it is easily done, by withdrawing a thread of the cotton once in two days or so. At last, when little more matter is discharged than may arise merely from the cord, the latter may be entirely removed, and a gentle pressure being continued upon the parts, by a roller, for
a few

a few days, a complete cure may almost always be depended on.

The reason for directing the seton to be introduced by an opening made in the superior part of the abscess is, that when the first opening is made in the depending part of a swelling, a considerable quantity of matter immediately runs out, which causing the sides of the upper part to collapse, renders it more difficult to introduce the director through the whole course of the abscess, than when done in the manner above prescribed. When properly executed, the bottom, as well as every other part of the tumour, is left distended to the last, very little of the matter escaping by the upper orifice. By being introduced in this way likewise, the quantity of cord that still remains to be used, is kept clean and dry; which it cannot possibly be when inserted in the contrary manner.

In all encysted tumours, of the thinner mellecerous kinds, the use of the seton is equally serviceable as in a lately formed abscess; so that the practice is by no means confined to one set of tumours only. It answers particularly well in all glandular collections of matter, where admission of air is attended with even worse consequences than in other parts. Thus, when it is thought advisable to open scrophulous soft swellings,

ings, they always heal much sooner, and easier with the seton, than by a large incision. Venereal buboes also, when fully matured, and when the teguments are not become thin by being long overstretched, heal much more readily and kindly by this management than with any other.

Of GANGRENE OR MORTIFICATION.

WHEN an inflamed part tends to mortification, the colour of it changes from a bright red to a leaden or livid cast, with small vesicles, containing a thin acrid serum dispersed over its surface; the pain abates, the pulse sinks, but continues frequent; the tumour at last loses its tenseness, turns quite black and flaccid, and so terminates in a real mortified or dead spot.

Of all inflammatory complaints, the erysipelas is observed most frequently to terminate in gangrene; and whenever phlegmon is, in any degree, joined with an erysipelatous affection, as not unfrequently happens, it seems thereby to acquire the same tendency, by being more difficult to bring to suppuration than the true phlegmon, and by advancing more often to the mortified state.

The

The most effectual means of preventing gangrene in every case of inflammation, is to endeavour to obtain either its resolution or suppuration; the different remedies for both which purposes have already been mentioned: but sometimes the disorder is far advanced, and gangrene already begun, the surgeon's assistance has been called; and in others, the inflammation runs so high, and proceeds so quickly, that notwithstanding the use of every remedy, a gangrene supervenes. In some instances, the progress is so quick, that the inflammatory state is hardly thoroughly discerned, before the mortification appears to commence. This is most remarkably the case in carbuncles, where the inflammation proceeds so rapidly to mortification, that there is seldom any evident tumour raised, the parts turning black, and ending in real gangrene often in the course of twenty-four hours from the first attack.

In every case of gangrene the surgeon should, at first, be extremely cautious in his prognostic: for even in the slightest affections of that nature, the system, from the contagion it receives by the absorption of the putrid matter, is, in some instances, so much affected, that the patients are suddenly carried off, without having been previously in any apparent danger.

In such cases, however, as succeed to inflammation from an external cause, where the gangrene is neither very deep nor extensive, and does not seem to spread, the prognostic should doubtless be more favourable than in those that suddenly arise from an internal cause, where the mortification runs deep, and especially when it is still continuing to advance; in which circumstance, the greatest danger is always to be apprehended. Indeed, where the mortification is considerable, even from an external cause, the patient is still in danger, till the diseased parts are not only separated, but entirely cast off from the sound. The putrid miasmata being of such a penetrating destructive nature, that many instances have occurred of patients being very quickly carried off, seemingly from that circumstance alone, long after the mortification had ceased to advance.

In the treatment of a gangrene, when no blood-letting or other evacuation has been prescribed during the antecedent inflammatory state of the disorder, and when the general symptoms of inflammation, particularly a quick, full, or hard pulse, still continue violent, especially when the patient is young and plethoric, it becomes absolutely necessary, even though mortification may have commenced, to empty the vessels a little by one general blood-letting. This, by
moderating

moderating the fever, and abating the universal heat, proves often a great means of preventing the disorder from proceeding farther.

Upon the same principles with blood-letting, gentle laxatives, and a free use of acidulated cooling drink, are also necessary. But, as in the continuance and progress of mortification, the patient is very apt to sink, and the pulse to become languid, every evacuation, especially of blood, should be sparingly employed, and in no greater degree than seems absolutely necessary for moderating such symptoms as at the time appear too violent.

But when, as is most frequently the case, before the disorder has made any great progress, the patient is much reduced, either by severe evacuations, or by the effects of the complaint; when the pulse is low, and the symptoms of fever not considerable, in these circumstances a quite opposite treatment becomes necessary. The principal indication, then, is to prevent the strength from sinking too much, by a proper use of cordials, especially those of the tonic kind, while, by the same means, we assist nature to free herself from, or to cast off the mortified parts.

For the same purpose, a good nourishing diet becomes necessary, with such a proportion of
generous

generous wine as the patient's strength, and the symptoms may seem to require.

By a due attention to regimen, particularly by a proper allowance of wine, much more advantage is commonly obtained than ever occurs from the use of stimulating cordial medicines. When the patient is much reduced, however, and very languid, some of those, such as the volatile alkali, and *confectio cardiaca*, may, at the same time, be prescribed, in such quantities as the situation of the patient renders necessary.

But of all the remedies hitherto used in mortification, none proves so certainly efficacious as the Peruvian bark, which often evidently stops the progress of the disorder; nor ought it ever to be omitted in the cure of mortification, except in the first stage, while several of the inflammatory symptoms yet remain violent. But so soon as these are tolerably abated, it may always be employed with safety and advantage.

The best rule for administering this remedy, is to give it always in as large doses, and repeated as often as the stomach will bear it. Unfortunately, however, in this disorder, the stomach can seldom bear large enough quantities of the bark in substance, which is always the most efficacious way of using it, but particularly in this case, when none of the finer preparations of the

medicine are ever so much to be depended on. The bark is found to sit easiest on the stomach when joined with some of the spirituous waters, as in the subsequent formula.

R Aq. alexiter. simp.

Cinnamom. fort. ana unc. iii.

Aromatic unc. ii.

Pul. Cort. Peruvian. sub'il unc. ss. Misce. Capiat cochlear. duo omni semihora, agitata phiala.

In this manner a drachm of the bark is taken every hour, which, in general, in less than twenty-four hours, has a considerable influence in producing a change in the disorder.

Besides the bark, the vitriolic acid is often used with advantage. The best form of giving it, is by acidulating all the patients drink with elixir of vitriol.

For this disorder a variety of topical applications has been recommended, particularly those of the antiseptic kind; such as the warm gums, and balsams, ardent spirits, &c. and to admit of their nearer application to the sound parts, with a view to the preservation of these from putrefaction, deep scarifications into the sound parts have been generally advised. But Mr. Bell observes, that though such articles may be of use in preserving dead animal substances from corruption,

yet

yet that they will always prove serviceable, in the same manner in living bodies, is very much to be doubted. It is even apprehended, that, by the strong irritation they always excite in a living fibre, they may rather do mischief; it being only a very slight degree of inflammation that is required. Mr. Bell adds, that the incisions too, when carried into the sound parts, with a view to facilitate the operation of such remedies, may likewise do harm, not only from the risque of wounding the blood-vessels, nerves, and tendons that lie in the way, but also by allowing a free entrance of the putrescent fluids into the parts not yet affected. And unless they are carried so deep as to reach the sound parts, applications of the antiseptic kind can never have any effect in answering the purpose for which they were intended.

For these reasons, and from never having observed any advantage to accrue from scarifications in mortification, Mr. Bell has long thought that they might be entirely laid aside. Theriac was, in former times, and still is, with some practitioners, a very common application in every cure of gangrene; but from the opportunities he has had of seeing it used, he cannot say that it ever seemed to produce any evident good effects.

Mr. Bell remarks, that all the advantages commonly observed from the great applications recommended for gangrene, are obtained with more ease, and generally too with more certainty, from the use of some gentle stimulating embrocation; which, by exciting a slight irritation upon the surface, especially when assisted by a free use of the bark, produces, for the most part, such a degree of inflammation as is wished for. With this view, he has frequently known a weak solution of sal ammoniac in vinegar and water, answer exceedingly well. A drachm of the salt to two ounces of vinegar, and six of water, form a mixture of a very proper strength for every purpose of this kind. But the degree of stimulus can be easily either increased or diminished, according to circumstances, by using a larger or smaller proportion of the salt.

Whenever, either by the means recommended, or by a natural exertion of the system, a slight inflammation appears between the diseased and sound parts, we may in general, with tolerable certainty, expect that in due time, the parts will be separated; and when a full suppuration is once fairly established, there can be little doubt that the mortified parts will be soon and easily removed.

A complete separation being effected, the remaining sore is to be treated in the same manner as a simple purulent ulcer, with very slight easy dressings, at the same time that a proper attention must always be paid to the support of the general system, by the continuance of a nourishing diet, the bark, and such quantities of wine as may seem necessary.

Of ULCERS.

AN ulcer is usually defined to be a solution of continuity in any of the softer parts of the body, discharging pus, sanies, or any other vitiated matter. But the disorder is not peculiar to the softer parts, and may effect even the bones: for every species of caries, with loss of substance, may, with propriety, be termed an ulcer, and is really so both in its appearances and effects.

Numerous and unnecessary distinctions of ulcers have been made by surgical writers; but Mr. Bell divides them into two general classes; in the first of which he comprehends all such as are merely local, and in the second, those that are

the consequence of, or are connected with any disorder of the constitution.

The importance of this distinction is of great utility in practice; for without it, the cure of ulcers is not only rendered extremely tedious and uncertain, but by treating such as are merely topical affections, with remedies directed to some disorder of the general system, many patients are consequently obliged to undergo very unnecessary courses of medicine, by which their constitutions are often irrecoverably injured.

Mr. Bell observes that the causes which, in different circumstances, may give occasion to ulcers, are exceedingly various, but in general they arise from one or other of the following.

1. From such as may be termed occasional or exciting causes; of which kinds are, wounds in general, bruises ending in suppuration, burns, and inflammation, whence soever derived, when terminating either in gangrene or suppuration.

2. From such as may with propriety be termed predisposing causes; of which kind are considered all disorders of the system in general, accompanied with determinations to, or affections of particular parts; such as fevers of all kinds that terminate in critical abscesses; also lues venerea, scrophula, and scurvy.

3. Ulcers may proceed from a combination of the two foregoing causes. Thus a slight scratch, or excoriation, that a sound constitution would have healed without any of the abovementioned disorders, produces a very disagreeable and tedious ulcer.

Respecting the treatment of ulcers, the first circumstance to be determined, is the propriety of attempting a cure or not. For, when ulcers have been of very long continuance, or appear to have had any effect either in carrying off, or preventing any disorder, to which the constitution may have frequently been liable, it has always been considered as dangerous to attempt their cure.

Such ulcers as have afforded a copious discharge, and have been of very long standing, it would doubtless be extremely imprudent to heal up all at once; as the system might probably suffer from the sudden retention of a considerable quantity of fluids, which it has been accustomed for a long while to throw off, by means of such drains. In confirmation of this remark, many cases have proved fatal upon such ulcers drying up suddenly, whether of their own accord, or by the imprudent use of astringent applications.

On the other hand, however, it is observed, that the inconvenience of a constant running sore, and that too for life, and perhaps in a very disagreeable situation, is such as none but very old and inactive people can be supposed to submit to.

The drying up of ulcers may, with a little caution, be always accomplished, and that with the greatest safety; the only requisite precaution before attempting the cure of such habitual ulcers, being the substitution of some other drain, by means either of a pea-issue or a cord. The former of these is managed with the greatest ease; and by increasing or diminishing the size and number of peas made use of, the quantity of matter may be regulated at pleasure.

An issue of this kind being opened, and having come to discharge properly, and in quantity nearly equal to what the ulcer afforded, the cure of the latter may then be carried on with the greatest freedom. If the sore has not been of very long standing, the size of the issue may be gradually lessened, till it is brought to consist only of a simple pea; and this can be kept constantly open with very little trouble.

But when, on the contrary, the ulcer has been of very long continuance, and especially if it seems to have been instrumental in preventing any
other

other formidable complaint, the issue should undoubtedly be continued of the same size for life. But even this may be done with no great inconvenience, at least in comparison with the trouble attending a large ulcer.

When the cure of an ulcer is determined upon, the next object of consideration is the method to be pursued for its accomplishment. Authors enumerate four different states of an ulcer in its progress towards a cure, viz. digestion, deterfion, incarnation, and cicatrization. Such a number of divisions, however, with the remedies appropriated to each, have tended to render this branch of the chirurgical art more complicated than is necessary.

I shall now proceed to take a more particular view of the two classes of ulcers formerly mentioned, viz. those which are merely local, and those which are connected with any disorder of the system. The former class contains the simple purulent ulcer, the simple vitiated ulcer, the fungous ulcer, the sinuous ulcer, the callous ulcer, the carious ulcer, the cancerous ulcer, and the cutaneous ulcer. The latter includes the venereal, the scorbutic, and the scrophulous ulcers.

The SIMPLE PURULENT ULCER.

BY the simple purulent ulcer is understood such as, at the same time that it is entirely a local affection, has the symptoms in common to all such disorders of pain and inflammation, very inconsiderable ; whilst the discharge is always of a mild purulent nature, and of a proper consistence.

This species of ulcer may be produced by a great variety of causes, but which act merely by producing a local complaint. In the cure of it, as very little inflammation is supposed to take place, but only a vacuity, either from a real loss of substance, or from a retraction of parts simply divided, the discharge at the same time being of a mild purulent nature, the only indications that appear necessary are, to diminish, as much as possible, any vacancy the ulcer may have occasioned, and to induce the formation of a cicatrix.

For the more effectual accomplishment of the first of these, the concurrence of two different circumstances is requisite, viz. the formation of a certain extent of new granulations ; and the diminution or decay of such parts as lie immediately contiguous to the ulcer.

It

It is observed, that either a considerable degree of inflammation, or the presence of any acrid corrosive matter, are exceedingly detrimental to the production of new parts; so that, in the cure, we must pursue such a treatment as tends most effectually to the prevention of those causes.

With this view, the first circumstance to be attended to, is to avoid the use of the several warm gums, balsams, and spirituous tinctures, in every case of ulcer, in opposition to what has been recommended by all the old writers, and is still used by many of the modern foreign practitioners. For though, in some species of ulcers, different articles of that kind may be employed, without much inconvenience, and in particular circumstances may even be of service, yet in every cure of simple ulcer, they always do mischief, and, for such sores, should be entirely laid aside; as ought also every thing topical that can occasion much pain or inflammation. Even the common basilicon, and linimentum Arcæi of the shops, are, for the same reasons improper. For every ointment that contains a large proportion of rosin or turpentine, always irritates very considerably. The only advantages which ought to be expected from the use of any ointment, should be, its allowing the different dressings to
be

be renewed with less pain than would otherwise happen ; and hence a composition of the mildest materials is, for such purposes, preferable to every other. Mr. Bell observes, that in this view, any ointment similar to the unguentum cereum of the Edinburgh Dispensatory, answers exceedingly well ; it being prepared with pure white wax, *sparma ceti*, and fresh olive oil without any other addition.

Pledgits of lint, spread thin with such an ointment, are in general applied, without occasioning the least pain ; and Mr. Bell informs us, that however apprehensive some people may be, with respect to every oily application turning rancid upon sores, which they have therefore condemned in all such cases, yet he can from experience affirm, that an ointment of this kind is never attended with any such effect.

Another objection has also been made to the use of unctuous applications, in the treatment of sores, viz. their being apt to render the parts lax and flabby, so as to prevent the new granulations from being so firm as they should, and otherwise would be, Mr. Bell acknowledges that this is the consequence of a long continued use of warm emollient applications, especially of fomentations and poultices ; but he affirms that an ointment of the kind recommended, very
thinly

thinly spread, never produces that effect, and always proves a more agreeable application than dry charpee alone; which, unless the sores are covered with large quantities of matter, always occasions a good deal of irritation, and, in some degree, is attended with the same effects as gentle escharotic applications.

In respect to the renewal of dressings, this must always be regulated by the quantity of matter. When the discharge is considerable, especially in warm weather, and in large sores, it sometimes becomes necessary to dress twice a day; but in general, once in the course of that time, is sufficient.

The next circumstance to which we ought to attend, is, to endeavour that the matter discharged be preserved in its proper purulent state, in respect of colour, consistence, and every other quality. For without particular attention to this point, the best conditioned matter degenerates, sooner or later, into a bad kind.

An object of the greatest importance is the preservation of a due degree of heat in the part affected; which is particularly requisite when the disorder is situated in the extremities.

Whilst any degree of inflammation remains in ulcers, the best mode of applying heat is by means of warm emollient cataplasms; but as
soon

soon as the purpose is attained, these ought to be laid aside. For by their softening quality, a too frequent and long continued use of them is apt to induce a relaxation of the parts to which they are applied. In this case, the same purpose may be answered equally well, by applying over the dressings thick quilted coverings of wool, cotton, or of any such substances as most effectually retain heat.

The other most material part in the cure of ulcers is gentle compression, which ought to be used at the same time with the other applications already mentioned. As soon as the inflammatory state of an ulcer is over, and a discharge of good matter is induced, slight compression, by means of a roller, may be immediately applied, and should be continued during the remainder of the cure. It should also be applied in such a way as not only to act by a gentle pressure upon the parts immediately surrounding the ulcer, but to serve as a support to the skin and other teguments, so as to prevent their retraction, which otherwise, especially in large ulcers, is very ready to happen.

When the incarnation of an ulcer is, as far as possible, completed, the next object in the cure is to produce a cicatrix. This purpose is frequently effected by nature alone ; but in many cases,

cases, when every deficiency appears to be even thoroughly supplied, the cure is still slow in accomplishing; the surface of the sores remaining raw, and, at the same time discharging considerable quantities of matter. It then becomes necessary to lay aside the ointment recommended for the preceding part of the cure, and to use one of a more styptic drying nature. In this view, the unguentum album, prepared with cerufs, answers exceedingly well, and Mr. Bell thinks even better than the *cerat. e lapide calaminar.* so commonly used in such circumstances. Lime-water also often proves a very serviceable application in this state of ulcers; the sores being bathed with it once or twice a-day, and afterwards dressed with cerufs ointment, a cure is generally soon effected.

Sometimes a cicatrix is prevented from forming, by the growth of new granulations being so considerable as to rise above the surface of the neighbouring sound parts. In such cases, it becomes necessary to have recourse to astringent and even escharotic applications, of which, among the milder caustics, the most effectual is blue vitriol. Unless in very obstinate cases, this almost always proves sufficient; and when it happens to fail, nothing weaker than the common caustic is ever found to succeed.

But

But in slight cases of this kind, a cure is often effected by the use of dry charpee alone ; a bandage being at the same time applied pretty tight over all.

During the cure of the most simple ulcer, rest of body, especially of the part affected, is of the utmost importance ; and when the disorder is in the lower extremities, the limb should be always kept in a horizontal posture, as being that which most favours the circulation of the fluids.

Mr. Bell observes that rest and horizontal posture, for the cure of ulcers in the lower extremities, have by practitioners in general, both ancient and modern, been considered as absolutely necessary. But it has lately been affirmed, that rest is so far from being necessary, that patients are cured as easily and certainly while going abroad, as when under the strictest confinement. Mr. Bell admits, that in very slight ulcerations this may sometimes be the case ; and that with the assistance of a pretty tight bandage or laced stocking, applied so as properly to support the parts, even sores of a worse kind may be frequently brought to cure, and the patient be allowed, at the same time, to take gentle exercise. But in general, so far at least as his experience goes, the regulations upon this point, enjoining strict confinement, in every ulcer of the extremities, as
handed

handed down by all the ancient writers, appear to be well founded.

In the cure of ulcers, a low regimen has generally been prescribed. But Mr. Bell remarks, that this course, when carried any great length, almost constantly does mischief, as it seldom fails of relaxing the habit; an event which affects not only the discharge, but every other circumstance relating to the sore. He thinks the only attention which in this case seems necessary, is to take care that no excess be committed either in eating or drinking. For whatever has the effect of producing even a slight temporary fever with any additional inflammation, proves, in such cases, highly prejudicial. But instead of a diet much lower than usual, as is most frequently recommended, Mr. Bell observes that a more full nourishing regimen, than the patient even in a state of health, has been accustomed to, is often found serviceable. For the discharge of purulent matter proves always so debilitating, that, in large ulcers, when great quantities of it are afforded, this circumstance alone generally weakens the patient too much, if the constitution is not at the same time enabled to support it by a nourishing diet. Mr. Bell informs us, that he has had many opportunities of observing ulcers of even the worst kinds, being soon brought to heal, by the allowance of

a good generous diet alone, after they had obstinately resisted all the usual applications and remedies.

For the same reasons that a low regimen is condemned, the use of purgatives, and in general, whatever tends to weaken the constitution, are improper. Nor does it ever happen, if due attention be paid to the different circumstances already mentioned, that internal medicines of any kind are necessary in this species of ulcer.

Of the SIMPLE VITIATED ULCER.

BY this appellation is understood that kind of ulcer which differs from the species above-described, chiefly in the appearance and nature of the discharge afforded. Mr. Bell observes, that the most common appearances of such deviations in the matter afforded by ulcers, are, 1. A thin limpid, sometimes greenish discharge, termed sanies. 2. A somewhat red coloured, thin, and generally very acrid matter, termed ichor. 3. A more viscid, glutinous kind of matter, called fordes.

The

The kind last mentioned is also frequently of a brownish red appearance, somewhat resembling the grounds of coffee, or grumous blood mixed with water. They are all much more fetid than purulent matter, and none of them is entirely free from acrimony. But that which has generally been termed ichor, is by much the most acrid of them, being frequently so sharp and corrosive, as to destroy large portions of the neighbouring parts.

In every ulcer discharging any of the above-mentioned acrid matters, the parts, instead of filling up with granulations, gradually waste away, and in place of a red healthy colour, have either a dark brown, or sometimes a black, tough, sloughy appearance. In all of them the pain is considerable, and generally more or less so in proportion to the corrosiveness of the matter.

In general, vitiated matter in ulcers proceeds from some particular affection of the solids, or secreting organs in the parts diseased; whereby such kinds of fluids are separated from the blood, as cannot be converted into good pus. This affection seems to consist in different degrees of increased action or inflammation of the parts diseased, occasioned by one or more of the exciting causes which give rise to ulcers.

The most proper method of treating those kinds of ulcers, is to foment the parts three or four times a-day, for half an hour at least each time, with any emollient decoction ; and then to apply pledgits of the wax ointment, with warm poultices over all, to be renewed as often as they turn cold.

Besides those topical applications, when the pain is considerable, opiates may be administered with great advantage, and should always be given in such doses, and as frequently repeated, as circumstances seem to indicate.

The habit of body must, in the mean time, be also attended to, and particular directions with respect to it, given according to the patient's immediate situation. Thus, when from a long continuance of an ulcer, or from any other cause, the constitution has been much reduced, we ought, by a full allowance in point of diet, to endeavour to repair it ; and when, on the contrary, the patient is of a full plethoric habit, and liable to inflammatory affections, it becomes proper to advise a low regimen.

In the former of those situations, the Peruvian bark proves highly serviceable. It frequently acts as a sovereign remedy, and particularly in effecting a change for the better in the nature of the discharge. In order to produce
such

such an effect, however, Mr. Bell remarks that it ought to be given in much larger quantities than are usually prescribed. In any complaint of this kind, it is seldom given to a greater extent than three or four doses a day, of a scruple or half a drachm each ; whereas when any considerable advantages are expected from it, six or eight doses of a drachm each, should always be given in that space of time ; and, in such quantities, it seldom fails of proving an effectual remedy.

But when ulcers occur in inflammatory constitutions, and in plethoric habits, the bark must be used with greater caution ; and it seldom ought to be given to any extent in such circumstances, till the inflammatory tendency is abated.

While the means abovementioned are used, and the part is kept at rest, and in a proper posture, it rarely or never happens that the discharge is not soon converted into good pus ; and when once this is thoroughly accomplished, every other appearance of the sore, in a very short time, generally changes for the better. At least this is commonly the case, unless the ulcer happens to be connected with some general disorder of the system ; a circumstance which we do not suppose to occur in the ulcers now under consideration.

So soon as the discharge is converted into a proper suppuration, the most material part of the cure is, in a great measure, effected. For the parts being no longer corroded by a constant immersion in an acrid matter, but, on the contrary, being covered by the most natural balsam that can be applied to them, commonly soon put on a red healthy appearance. New granulations being then at liberty to form, any loss of substance which occurred, is as far as possible supplied, in a shorter or longer space of time, according to the depth and size of the ulcer, situation of the part affected, age and habit of the patient.

When sores of this kind are by those means reduced to the state of simple purulent ulcers, they are to be treated, during the remainder of the cure, in the manner formerly prescribed; that is, with very mild dressings, at the same time that due attention is paid to the preservation of a proper degree of heat in the parts, and the use of a continued gentle compression, from the time of the inflammatory symptoms having been thoroughly removed.

It frequently happens, however, in this as in every species of ulcer of long standing, that although the parts, by proper management, may have been brought to put on a very healthy appearance,

pearance, and although the discharge has, from a very bad sort of matter, been converted into the best kind of pus, yet still the sore cannot be got to cicatrize, but continues to discharge as plentifully as ever.

In such a situation, when the directions formerly delivered with respect to the cicatrization of sores, do not succeed, as may often be the case, an issue of a proper size, inserted in any convenient situation, will frequently do more towards the accomplishment of a cure, than all the applications which are generally used in such cases.

Indeed, in old habitual ulcers of every kind, nothing but the introduction of adequate drains will ever produce permanent cures. For, though by the use of drying astringent applications, the sores may be covered with a thin cicatrix, or scarf skin, yet, in those cases, such cures are never of any long duration.

In all such ulcers, therefore, and indeed in every species of the disorder that has been of long standing, the first part of the cure ought to consist in ordering an issue, of such a size as may afford a quantity of matter, in some degree proportioned to that which the sore has generally yielded. And, though the situation of such drains has commonly been chosen as near as possi-

ble to the part affected, yet, provided the same quantity of matter be discharged, the situation of the issue is probably not of much consequence; and therefore that which is most convenient for the patient may be always fixed upon.

The issue having discharged for some time, and the different remedies formerly recommended, being still continued, the cure of such ulcers will, at last, be commonly completed.

Nitre has of late been much recommended in this species of ulcer; but Mr. Bell informs us, that, though he has given it in this as well as in other kinds of sores, in very considerable quantities, and with every necessary precaution, he cannot say that he ever observed any evident effects produced by it.

Of the FUNGOUS ULCER.

BY the term fungus is understood such preternatural risings of the parts in sores, as are commonly more soft and spongy than sound healthy granulations; which, though in general they do not acquire any great degree of bulk, yet

yet by very long continuance and neglect, do, in some instances, arrive at a very considerable size. And though they are, for the most part, at first soft and lax, yet, when of long duration, they likewise, in some cases, acquire very firm and even unnatural degrees of hardness.

The pain attending them is commonly not considerable, but sometimes otherwise; and the discharge varies according to the species of ulcer with which they happen to be connected.

With respect to the causes of the disorder, it has been observed, that in a healthy state of body, and especially in young persons, the granulations that form in simple purulent ulcers, are very apt to rise above the surface of the neighbouring parts. This may generally be prevented, by observing the directions formerly delivered; but if, in such circumstances, the sore is neglected, it commonly becomes fungous.

Another variety of the complaint arises in the cure of wounds and ulcers of different kinds, from not attending to their being sound at bottom before the new granulations are allowed to proceed any length. In this manner, whether from any sinus being left unfilled up, or from any corrupted parts that may not have thrown out, continuing to act as extraneous bodies, the granulations that first appeared, still continue to advance;

advance ; but instead of cicatrizing when on a level with the neighbouring sound parts, continue to rise considerably beyond them, till the disorder now under consideration is pretty far advanced.

When in this way a fungus is produced, it daily increases, till the cause be removed, either by art or nature, in consequence of a plentiful suppuration being formed below, and bursting out ; which, by laying open the seat of the complaint, gives room for a proper treatment to take place.

When the complaint proceeds entirely from an over-growth of the parts, without any disorder lurking at the bottom of the sore, when the fungus is of a considerable breadth, and, especially when it does not rise to any great height, the use of escharotics should be immediately had recourse to.

Mr. Bell observes, that of all the artificial caustic preparations enumerated by authors, the lunar caustic is, for such purposes especially, by much the best. It acts more quickly, and is not attended with more pain than many of the milder sorts. We are always sure of its doing the business effectually, which is not the case with any of the others ; besides, that it is not near so apt to run, or spread over the neighbouring parts, as

some of the other compound forms of caustic, which is frequently a very troublesome circumstance attending them.

A slight touch every second or third day, with this kind of caustic, will, in a shorter or longer time, according to the size and texture of the fungus, almost always, at length, extirpate the complaint. After the application of the caustic, the parts should be covered with dry lint, and not, as is commonly done, with any kind of unguent, which always tends to destroy the activity of such remedies.

The treatment we have been describing is directed upon the supposition that the surface of the fungus is of considerable extent, and that it is not risen to any great height above the contiguous sound parts. But under different circumstances, viz. when the base is narrow, and the height of the excrescence considerable, the easiest and most expeditious method is to take it off by ligature, which being applied at its root tolerably tight, and straitened a little every day, soon destroys the circulation in the swelling, so as to cause it in a short time to drop off.

When, as was observed, the fungus is narrow at the base, and especially when it is in the least pendulous, a ligature can be applied and kept on with the greatest ease; but when the tumour is
broader

broader below than above, some assistance is necessary to prevent the ligature from slipping off.

A strong straight needle, says Mr. Bell, with an eye near its point, and fixed in a handle, being pushed through from one side of the tumour to the other, at its base, and having two strong waxed threads introduced at its eye, is to be again drawn back, having the threads with their ends hanging out at each side of the swelling. In this situation, a firm ligature is to be formed round one half of the tumour, by the two extremities of one of the threads; and with the other two, the other half is in like manner to be comprehended. Each of them being from time to time properly tightened, both halves of the swelling will, in general, very soon fall off. The hint of this practice was taken from the description of a curved needle of this kind, recommended by Mr. Cheselden, for the extirpation by ligature, of diseased tonsils,

The fungus being removed by either of those methods, the sore is to be treated as a simple ulcer.

The other species of fungus, or that which proceeds from the new granulations in ulcers not being raised on a sure foundation, purulent matter, or some other extraneous body being lodged at the bottom of the sore, is, in general, very easily

easily distinguished from the kind last mentioned. It rises with much greater rapidity, and is not near so firm; being, on the contrary, always more soft and flabby than healthy granulations.

Of the S I N O U S U L C E R.

BY the sinous ulcer is meant that species of sore with one or more openings running into it, from chinks of the same, or of different directions; and which generally are seated in the cellular membrane, between the common teguments and muscles, or between the interstices of the different muscles themselves.

The most frequent cause of sinuses forming in ulcers and abscesses, is the want of a free vent to the discharge; which naturally falling to the most depending part, if not evacuated, very easily insinuates itself into the soft yielding substance of the cellular membrane, and proceeds on gradually till it finds an opening, either externally or into some of the neighbouring cavities.

It is observed that very tight bandages, applied directly upon ulcers, if they are not made to
act

act likewise upon the neighbouring sound parts, for some way both above and below the sores, are not unfrequently attended with the same effect.

In every case of recent sinus, and even, in general, in those of longer standing, if they can be easily reached with proper applications, and when the constitution, in other respects, is healthy, a favourable prognostic may be formed. But when the complaint has been of very long continuance, and especially when the different sinuses open into any of the joints, or are much out of the way of operation, the cure may be considered as both very difficult and doubtful. Nor is there any complaint that more frequently baffles all the efforts of the practitioner, than some species of this disease, particularly the fistula in ano.

In recent complaints of this nature, all the old writers, and many of the moderns, have recommended the use of vulnerary or healing injections. And in the more advanced stages of the disorder, when, by long continuance, the sides of the different sinuses have become callous, escharotic injections and powders have been directed. But Mr. Bell observes that none of these has ever been found to produce any real good effects; and a too frequent use of them
has

has often rendered hard and callous such sinuses as were before of the most simple nature.

Others have advised, in every case of this kind, especially when the complaint partakes, in any degree, of a fistulous nature, to lay the different sinuses open, from one end to the other, and by cutting out all the hardened parts, so to convert the whole into one common ulcer, and to proceed afterwards with the cure in the ordinary manner.

Mr. Bell observes, that this method will, no doubt, very frequently effect a cure; but, independent of the great pain, and very large unseemly cicatrix which it always occasions, it cannot be safely practised in every case; such as when sinuses run far up the rectum; or when they penetrate deep, and run below either large blood vessels, tendons, or nerves.

The intention of cure, in every case of sinus, is to produce a coalescence of its sides, so as to obliterate all vacuity. The most effectual means for this purpose, is first to make a depending orifice, that may allow free exit to the matter; and then, by gentle irritation, to induce on the internal surface of the sinus a slight degree of inflammation, which is the most favourable state for occasioning an adhesion between any two parts.

Both

Both these intentions are fully answered by the introduction of a seton from the orifice in the ulcer, along the course of the sinus to its other extremity ; where an opening, large enough for the discharge, ought to be made in the manner formerly directed in cases of abscesses.

The cord of cotton or silk ought at first to be pretty large, more or less so, according to the capacity of the sinus ; to be diminished gradually as the cure advances, by taking away a thread or so from its thickness every second or third day. At last, when the discharge is greatly lessened, by the vacuity being mostly filled up, the seton should be totally withdrawn, and a bandage, somewhat tight, being applied over the part, and continued some time longer, a complete cure will, in general, be effected in due time.

In every case of this kind, the first step to be taken, is to discover the direction in which the sinuses run. This may, for the most part, be easily done, either by introducing a probe, or by observing where the matter points, on being allowed to collect for some time, and whence it comes, on the parts being pressed. Into every sinus that opens into the ulcer, a seton, as above directed, should be introduced.

This method of curing sinuses, by the use of the seton, is free from all danger, and is admissible

ble in almost every kind of sinus that can occur. Even when sinuses run deep among the muscles and blood-vessels, and when it would therefore be unsafe to use either the scalpel or acrid injections, setons, by means of the director, may be always employed with the greatest safety.

When the sinuses are removed, the ulcers with which they were connected, are to be cured in the ordinary manner.

It deserves to be remarked, that this part of surgery has been much improved by Mr. Pott, who has introduced a simplicity, before unknown, in the treatment of fistulous complaints in ano and in perinæo. In every case of those kinds, it formerly was, and with many is still the practice, to cut the affected parts out entirely, whether they be much hardened or not; a method which not only occasions a great deal of unnecessary pain, but very seldom produces such an agreeable or speedy cure, as is obtained by merely laying open the parts with a simple incision; and which is all that, even in the most obstinate cases, should ever be attempted. For, as Mr. Bell observes, if a cure cannot be obtained by such an operation alone, or by the seton, when it can be used, cutting out the parts will never effect it, unless they are evidently in a scirrhous state; in which case extirpation of the

diseased parts may, no doubt, sometimes be necessary.

Of the CALLOUS ULCER.

AN ulcer is said to be callous when its edges, instead of contracting, and so diminishing the size of the sore, retain their dimensions, turn ragged, and at last by acquiring a preternatural thickness, often rise considerably above the level of the neighbouring parts. As it is generally from neglect, or improper treatment, that ulcers turn callous, the discharge afforded by them is commonly a thin vitiated matter.

It is chiefly in this species of ulcer, that varicose veins occur as a symptom, especially when the complaint is seated in the lower extremities. This seems to be owing not only to the difficulty which the blood, in such situations, meets in its return to the heart, but, in a great measure, to the stricture occasioned by the callosities on the course of the different veins.

Mr. Bell observes, that by many, even late writers, this species of ulcer has been termed varicose ;

ricose ; on account of their supposing such sores to proceed from, and to be as it were supported by matter furnished from those swelled veins, which frequently seem to open into them ; but this error, continues he, it is evident, must have proceeded from want of attention to the cause of such swelling in the veins, besides a mistaken notion with respect to the formation of pus and other kinds of matter, which were formerly, in general, supposed to circulate with, and to be deposited from the blood ; an opinion that is void of foundation.

The causes of callosities in ulcers, as intimated above, may in general be reduced to neglect and improper management. When sores are injudiciously treated either by irritating, or by very relaxing applications, or when entirely neglected, so that fungous excrescences are either allowed to arise, or different dressings, and other extraneous bodies, remain too long in their cavities, such substances greatly obstruct the diminution, or contraction of the ulcers. The small vessels of the edges being thus prevented from proceeding farther in a proper direction, push upwards, and sometimes even backwards, till in consequence of the usual pressure from the necessary bandages, they naturally acquire a morbid hardness or callosity ; and which, so long as it is allowed to re-

main, effectually prevents the accomplishment of cure, however judiciously the sores may, in other respects, be treated.

For effecting the cure of a callous ulcer, all improper applications, which may have been used, should be immediately laid aside; and if any fungous, or other extraneous body appear to be doing mischief, they ought as soon as possible to be removed. This being thoroughly accomplished, and the sore brought to a clean healing condition, the different callosities are then to be destroyed; for till that is completely effected, it is in vain, by any kind of application, to expect a cure.

In complaints of this kind when very recent, warm emollient cataplasms, continued for a proper time, will sometimes, by softening the callosities, without any other application, answer every intention of cure; but it is only in the earliest periods of the disorder that these ever prove effectual. For when it has been of long standing, so that the edges of the sore have acquired much preternatural hardness, neither the use of emollients, nor of gum plasters, as recommended by many authors, are ever attended with any remarkable good effect.

The only remedy then to be employed is the scalpel or caustic; and as the latter, when properly

perly managed, Mr. Bell observes, is equally certain with the other, it should, as the easiest method, be always had recourse to, and the lunar caustic be preferred. The hardened parts being gently rubbed over with it, once in two or three days, or as often as the slough occasioned by its preceding application falls off, the callosities will thereby, in general, be soon extirpated; and the sore being previously reduced near to the state of a simple purulent ulcer, is afterwards to be treated accordingly.

For the cure of the varicose veins, nothing has been found so effectual as the laced stocking, or spiral bandage. But to have a proper effect, it ought to be continued for a considerable time.

Of the C A R I O U S U L C E R.

BY the term carious ulcer, is here understood that species of the disorder only which is connected with a local affection of a bone, and falls properly under the management of the surgeon.

Mr. Bell observes, that the most clear and simple idea that can be given of a caries is, that

is a disorder of the bones, of exactly the same nature as a sphacelus or gangrene is of the soft parts. The blood-vessels in bones not being so numerous in proportion, as in the softer parts of the body, the anastomosis of the different vessels cannot in them occur so frequently ; so that when any considerable artery of a bone happens to be destroyed, the parts supplied by it naturally suffer much more than what, from a similar cause, any of the soft organs would do. And, as all the blood-vessels of bones are communicated to them through their surrounding membrane the periosteum, upon which they generally run a considerable way, before penetrating deeper, it is not very uncommon for a caries to occur in a bone which has suffered no other apparent injury than that of having a very small portion of its membrane destroyed.

It is not however to be understood, that a caries must always necessarily follow a destruction of any part of the periosteum ; for the contrary frequently happens, and, unless the injury has been so considerable as, at the same time, either to affect the organization of the bone itself, or to occasion the destruction of some principal artery, caries never will occur merely from the periosteum being abraded. But whenever an
 accident

accident has had either of these effects, the other will always very certainly follow.

From the first appearance of a bone, after being laid bare, unless its substance has been evidently affected, we never can at once determine precisely, whether a caries will succeed or not. From a number of observations, Mr. Bell is of opinion, that in mere abrasions of the periosteum from ordinary accidents, there is at least an equal chance that it will not. A short time, however, will always resolve the uncertainty. For, if, at the end of the fourth day at farthest, a bone that has been denuded still retains its natural appearance, we may, in general, with tolerable certainty, conclude that no carious affection is to succeed, and may accordingly go on with safety in the treatment, as in every case of a simple wound; which can never with propriety be attempted, whilst there remains any uncertainty with respect to the state of the bone. And hence the great importance of being able to determine, whether a bone laid bare is to be attacked with caries or not. For, if from want of attention, a cure should be attempted in a case where caries is to follow, and should, as it frequently might do, succeed, the whole fabric would be again to destroy, much unnecessary pain thereby given to the patient, and a permanent cure be

much longer in obtaining, than if it had been properly pursued at first.

In general, however, as has been already observed, if such an accident is to terminate in caries, it usually shews itself in a very short time. By the end of the third or fourth day at farthest, the bone begins to lose its natural healthy appearance, becoming first of a pale white, and afterwards of a slight yellow colour. Whenever this appearance commences, no doubt can be any longer entertained of what will be the consequence.

Sometimes, however, it continues in that state many days, and becomes gradually of a more deep tallow appearance; in which condition it commonly remains a shorter or longer time, according to the violence of the inflicting cause; and afterwards goes through the different stages of brown, light, dark, &c. till it has acquired a darkness of the deepest dye; a period at which that portion of the bone is supposed to be arrived at, perhaps, the highest degree of mortification.

The discharge from such ulcers is never of the consistence of good pus, but for the most part considerably thinner, and, from the first appearance of caries, acquires a most disagreeable fœtor, which increases with the progress of the disorder.

At

At last, it likewise becomes of a blackish hue, at the same time that it is often extremely acrid.

As the degrees of blackness or mortification advance, small foramina or holes seem to form in the diseased parts, and by degrees increase considerably, till even the most solid bones acquire a spongy appearance. In this situation, the mortified part generally becomes loose, and when pressed upon, a considerable quantity of fattish-like matter, with an intolerable foetor, may commonly be forced out from the different openings; which taints the whole discharge of the ulcer, and gives it a peculiar smell. This circumstance alone affords almost as certain a distinction in cases of latent caries, as any that can be given.

In ulcers attended with a carious bone, the fleshy parts never have a healthy appearance, but are softer and more flabby than natural; and instead of a florid red, have rather a dark brown, with somewhat of a glazed complexion.

The granulations, however, always advance quickly enough, and would frequently proceed too far, if they were not prevented; which it is always necessary to do, till the diseased part of the bone is either cast off by the efforts of nature, or cut out by art, so that the cure may take place with certainty from the bottom of the sore.

When

When neglected for any considerable time, those soft productions in carious ulcers, frequently increase so remarkably, as to form very large and troublesome excrescences.

We have hitherto been supposing, that only a portion of the substance of a bone has been affected; but the same phenomena occur when the caries has been so considerable as to affect a bone through its whole circumference. Only, in that case, the caries generally advances more quickly, and, in the one, a cure is sometimes obtained by a single lamina or so being cast off, whilst in the other, the whole thickness of the bone is frequently obliged to be taken out.

Such are the different appearances of caries proceeding from an external accident that has laid the bone fairly open to view. But the same kind of disease frequently occurs in a more latent manner, and, in such cases, always proves much more troublesome.

Ulcers of long standing about the tibia, or any other bone not thickly covered with flesh, merely by the matter insinuating itself to the periosteum, and there, or in the bone itself, producing any erosion or inflammation, very often prove the origin of troublesome caries; which, as long as it remains, effectually prevents the cure of all such sores, notwithstanding the use of

the most approved applications. For when, in consequence of very drying astringent remedies a cicatrix happens to be procured, it always proves a short temporary cure only, the disease soon afterwards again breaking out.

In such cases, when the external ulceration is not attended with a great destruction of parts, so that the bone still remains with a tolerable thick covering, a caries is not always easily distinguished, and therefore the surgeon is frequently at a loss how to proceed in the cure. But with a little attention, and especially with the assistance of experience in former circumstances of a similar nature, a carious bone may, in general, be readily enough detected.

When a probe can be introduced at any opening, and admission to the bone be thereby procured, if a roughness of its surface is discovered, the case is then beyond doubt.

Frequently, however, there is no evident opening in the surface of the fore; and if any exists, it is often so small that no suitable instrument can get admission. In other cases, when the opening is tolerably large, and when a caries is certainly present, yet the diseased part cannot be reached with the probe, from the sinus leading to it running either obliquely, or perhaps in different winding directions.

If

If a caries really exists, any new parts which may have appeared in the fore, are commonly, as was before observed, soft and flabby ; and instead of a regular surface, the new granulations sprout up in different clusters, about the size of small nuts, usually with a dark brown appearance, in place of a healthy red.

These circumstances, with the discharge being of a thin, dark, greasy appearance, and especially when attended with that peculiar abominable foetor which spoiled bones always emit, afford the strongest indications that the bone is carious.

In general, the causes of caries are whatever can, by erosion or otherwise, destroy the circulation in the whole, or in any part of a bone ; such as wounds which effect either the periosteum or bones ; violent contusions, and inflammation of the periosteum, ending either in abscess or gangrene ; the acrid matter of ulcers penetrating to, and destroying the periosteum ; and, lastly, the improper application of sharp acrid spirits and powders to bones merely laid bare ; a practice recommended by almost all the ancient writers on this part of surgery.

In all cases of caries, the prognostic must depend upon a variety of circumstances, the principal of which are the following, viz. the situation

tion of the diseased parts ; the nature and organization of the affected bone ; the nature and degree of the inflicting cause ; the size of the caries, with the age and habit of the patient.

Caries being a disorder of the same nature in the bones, as mortification is in the soft parts, no cure can with propriety be attempted, until the diseased parts be removed ; and in a healthy constitution, this separation is generally accomplished by a natural exertion of the system, operating by a slight degree of inflammation.

The principal indication, therefore, in every case of caries, is to excite and support, as long as may be necessary, such a degree of inflammation in the adjoining sound parts of the bone, as may be requisite for the total separation of those which are mortified.

If the diseased part of the bone be not quite bare, there is a necessity for laying it open, so far as is requisite for getting freely at the disease of the bone in its full extent. This may generally be done by an incision along the course of the caries ; but when the disorder extends over any considerable surface, it becomes necessary to make a crucial incision, or even to remove part of the teguments altogether ; and, till the diseased part of the bone is entirely removed, we must, by due attention from time to time, prevent the formation

tion of new parts, so far, at least, as might in any degree obstruct the separation of the caries.

Mr. Bell observes, that whether authors have ever had in view, such an indication as the abovementioned, is uncertain; but the means employed in such cases, to accomplish a cure, have, in general, been quite opposite to those, which, for such an effect, ought to be pursued; and entirely different from the means now used by many practitioners with much greater success.

The directions laid down by all the old writers on this subject, and which are continued by some of the moderns, are, in every case of caries, or even only of a denuded bone, to apply immediately to the bone itself, powders and tinctures of aloes, euphorbium, myrrh, and other warm gums. This method, it is probable, they were originally led into, with a view to correct the great degree of fœtor and putrefaction, that in cases of carious bones always take place; and from custom only, the practice has been continued without any other satisfactory reason. For the only effects such applications ever can have, exclusive of correcting the smell, is to irritate and inflame the soft parts of the fore, without having the smallest influence on the more material disease of the bone. Because, when the caries is of any considerable depth, such substances

stances can never penetrate to, or affect the sound parts of the bone, where alone, by the irritation they would excite, some influence from them might be expected. And when, on the contrary, no caries or affection of that kind has appeared, such applications to bones merely denuded of their periosteum, can never, in any respect, be necessary, and may even be frequently the means of inducing a real caries.

Mr. Bell farther observes, that another great remedy, recommended by almost every author, especially in the more advanced stages of caries, is the actual cautery. This, however, says he, independent of the many objections made to it by patients, from the pain and cruelty attending it, is evidently, from its nature, a very injudicious application in all such disorders.

If the cautery be applied in such a manner, as entirely to destroy the diseased parts of the bone, as is commonly recommended, the sound parts underneath, from the degree of heat necessary for that purpose, must undoubtedly always suffer so much, as soon to be rendered equally carious with those intended to be removed. And, on the contrary, when used in a more sparing manner, the diseased part of the bone will not be removed; at the same time, that a very great risque will still be run of retarding the natural exertion of the

the system for the removal of the disease. For even a slight degree of heat will effect the destruction of such granulations as nature may, for that purpose, have already formed ; and the just medium necessary for destroying the morbid, without affecting the sound parts, is scarce possible to be determined.

When, for any particular reason, the actual cautery might be judged improper, the same authors have recommended to make use of different artificial caustic preparations ; and others, as the shortest process, to strike off at once all the diseased parts with a chisel and mallet. But Mr. Bell observes, that the same objections stated to the use of the cautery, hold equally strong with respect to these. So that in every case of caries, all such precarious applications should be entirely laid aside, especially as we have it in our power to accomplish the same indication in a much more safe and certain manner.

For the purpose of exciting a necessary degree of inflammation, the most effectual and the safest method, and that which, in slight cases of the disorder, always proves sufficient, is the making a number of small perforations all over the surface of the carious bone, to such a depth
as

as to give the patient a very little pain, and no farther.

This operation being, in different parts, renewed every third day or so, the diseased portion of the bone, in a short time, not only loses the cohesion of its own parts, but a gentle inflammation being, by the same means, raised and kept up, till a free suppuration is produced, the whole mortified mass is generally soon after entirely thrown off.

These preparations are very conveniently and effectually made by a pin or perforator, such as is used for fixing the head of the trepan.

Though the operation thus performed, answers, in general, effectually in slight cases of caries, which are not of great extent, and which do not penetrate deeper than the first or second lamella of the bone; yet when the disease is very extensive, and especially when it goes deep into the substance of a bone, it shortens the process considerably, if, in place of the perforator, a very small head of a trepan be employed.

This instrument being applied at proper distances over the surface of the caries, and carried just so deep as to give the patient a very little pain, tends much to produce that degree of inflammation, which is so neces-

fary in all such cases, at the same time, that, by converting, as it were, a very large caries into so many smaller diseased parts, their separation from the sound part of the bone is much more easily effected, than if the whole surface had still remained in one continued piece.

Whenever any of the parts loosen at the edges, their complete separation may be always greatly forwarded, by daily insinuating below them the end of a common spatula or levator, so as to press their edges a very little upwards.

The head of a common trepan is often used for taking out a piece entirely, when bones happen to be carious through the whole course of their different lamellæ. But in the state of the disease now under consideration, it is not supposed to have got such a length; and consequently such practice could not with propriety be adopted.

After the use of either of the abovementioned instruments, the ulcer is to be dressed in the common methods, only so long as any of the carious bone remains, the putrescency and fœtor are generally so considerable, that it becomes necessary to make some applications, merely with a view to correct those effects. This purpose is, for the most part, effectually accomplished by dressing the carious bone with lint soaked

soaked in a strong decoction of Jesuit's bark and walnut-tree leaves, the rest of the fore being at the same time dressed as directed for cases of simple ulcer.

The directions above delivered proceed upon the supposition that the disease does not penetrate far into the substance of a bone ; but when this happens to be the case, so that a considerable portion, perhaps, of its whole circumference, is affected, or the disease extends even round the whole bone, the shortest process then, is to take out, at once, all the diseased parts, either with the head of a trepan, frequently applied, or by means of a small spring-saw.

In many situations this may often be easily done, particularly in the skull, in the bones of the hands and feet, as also in those of the legs and arms, when the caries does not run into the necks and heads of the bones, so as to affect the joints. In such a case, if an anchylosis does not ensue, or if nature does not some way or other, effect a cure, recourse must be had to amputation ; a caries in the extremities of large bones becoming a disorder for which no remedy has yet been discovered.

But when a caries is confined to the middle of any of the bones of the extremities, excepting, perhaps, the thigh, where the thickness of parts

is so considerable, amputation of the member should never be advised. For, with a little patience and attention, if the patient's health is not much weakened, nature may, in general, be so far assisted by removing the diseased parts, that a complete cure may, at last, be most frequently obtained. In no case whatever ought we to despair, when the carious part can, with safety, be removed. For however extensive the disease may be, if we can properly accomplish its removal, nature will seldom fail in filling up the vacancy.

During the treatment of caries, it must be understood that the same attention is requisite to the patient's habit of body, diet, and regimen in general, as in other species of ulcers.

After the extraction of the carious bone, the sore which remains is to be treated in the same manner as directed for that species of ulcer, to which, at the time, it may appear to belong.

Of the CANCEROUS ULCER.

BY a cancerous ulcer is understood that species of sore which commonly succeeds to hard swellings of the glands; though, in some instances it occurs without any previous hardness. The edges of the ulcer are hard, ragged, and unequal, very painful, and reversed in different ways, being sometimes turned upwards and backwards, and on other occasions inwards. The whole surface of the sore is commonly very unequal, there being in some parts considerable risings, and in others deep excavations. The discharge is generally a thin, dark coloured, foetid ichor, and is often possessed of such a degree of acrimony as to excoriate, and even destroy the neighbouring parts. In the more advanced stages of the disease, likewise, by the erosion of blood-vessels, which occurs, considerable quantities of pure blood are sometimes discharged.

Patients labouring under real cancerous affections, universally complain of a burning heat over the whole ulcerated surface; which, in general, is the most tormenting symptom that accompanies the disorder. The shooting lancinating pains, likewise, which were troublesome in the most occult state of the complaint, become now a great deal more so.

These are the symptoms which most frequently attend an ulcerated cancer, but the appearances of such sores are extremely various. When two, three, or more, however, of those enumerated concur in the same ulcer, we may always be pretty certain that it is of the cancerous kind.

The situation also of such sores affords some assistance in discovering their real nature; for though cancers doubtless occur in any part of the body, yet they are by far most frequent in the substance of the glands.

No disorder has so much baffled the attempts of art as that under our present consideration, which seems, however, to have been treated with peculiar success by the late Mr. James Hill, surgeon, at Dumfries. In the year 1772, when he published his observations on this subject, he had extirpated from different parts of the body eighty-eight genuine cancers, which were all ulcerated except four, and all the patients, except two, recovered of the operation.

Of the first forty-five cases, only one proved unsuccessful. In three others, the cancer broke out again in different parts; and a fifth was threatened with some tumours at a distance from the original disease. These tumours, however, did not appear till three years after the operation,

tion, and the patient was carried off by a fever before they had made any progress. All the rest of the forty-five continued sound as long as they lived, or at least were so in the year abovementioned. One of them survived the operation above thirty years; and fifteen were then alive, though the last of them was cured in March 1761.

Of the next thirty-three, one lived only four months; and in five more the cancer broke out a fresh, after having been once healed. That out of forty-five cases, only four or five proved unsuccessful, and six out of thirty-three was owing, we are told, to the great number of patients that flocked to Mr. Hill from all corners of the country; several of whom, after delaying till there was little probability of a cure by extirpation, or any other means, forced him to perform the operation contrary to his judgment.

It appears from Mr. Hill's register, that after a course of thirty years practice, thirty-nine of sixty-three patients were alive and sound; and he thence observes, that the different patients lived as long after the extirpation of the cancers, as according to the bills of mortality they would have done, had they never had any cancers, or undergone any operation.

The remaining twenty-five, which completes the eighty-eight, were cured since the year 1764. Twenty-two of those had been cured, at least, two years: some of them were seventy years old, and one ninety.

From these, and many other authenticated facts, which might be adduced to confirm the success attending the extirpation of cancers, there seems to be reason for considering the disease, in general, as a local complaint, not originally connected with any disorder of the system. This, in every case of real cancer, or rather in such scirrhosities, as from their nature are known generally to terminate in cancer, should certainly determine us to have as early recourse to extirpation as possible; and if this was done soon after the appearance of such affections, or before the formation of matter took place, their return would probably be a very rare occurrence.

From the universal testimony of medical and surgical writers, very little is to be expected in the treatment of cancerous disorders from internal medicines. Nor are external applications any farther to be depended upon, than with a view to palliate particular symptoms.

Among the many remedies which have been proposed for the cure of the cancer, none, perhaps, has been so much extolled as the cicuta. But

Mr.

Mr. Bell informs us, that though he has seen it exhibited with all the attention to its preparation that could possibly be given, yet, in real cancers, he never knew it, or indeed any other remedy, produce a cure.

In simple cases of indurated glands, he acknowledges that he has frequently known the use of cicuta attended with good effects; and in the advanced stages of cancer, when the excision was determined against, he has on different occasions, found it useful, both by relieving pain, and by procuring from the sores a better and less acrid discharge than could otherwise be obtained. But whenever there is no objection to the extirpation of a cancer, so soon almost as the disease is discovered, that operation should always, as the most certain remedy, be had recourse to.

The removal of cancerous disorders, even in the slightest cases, should be always effected with the scalpel, in preference to caustic; the irritation generally occasioned by which, with the pain and inflammation that commonly ensue, are, in cancerous cases especially, very strong objections against any remedy of this kind. Mr. Bell observes that Plunket's application, which is evidently of a caustic nature, and which probably consists chiefly of arsenic, has, no doubt, like every other medical secret, been greatly extolled; but

but it is not probable, if the different cases in which it has been used were all fairly examined into, that it would be found ever to have produced any advantages which could not more certainly and speedily have been obtained from the scalpel.

Wherever the disorder is seated, every part that has the least appearance of disease should always be removed ; and if, even in the course of after-dressings, any cancerous portions have been left, these should also be directly extirpated, otherwise the disorder will as certainly return as if no part of it had been removed. Even every indurated gland which appears in the neighbourhood of a cancerous sore, should as certainly be taken away as the ulcer itself ; for, if allowed to remain, there can be little or no chance that the operation will be attended with success.

When the complaint is seated in the breast, though perhaps part of the mamma only may be affected, the whole should always be removed ; for leaving part of it can never be attended with any advantage, and frequently proves very inconvenient to the patient.

But though it is always proper to extirpate every part that is really diseased, none of the teguments should ever be unnecessarily destroyed, nor more of them taken away than is altogether requisite.

quisite. For the smaller the cicatrix that remains after the part is cured, the less will be the consequent irritation ; and perhaps, from that circumstance, the chance of the disease returning, may be in some measure lessened.

Mr. Bell informs us, that, at least, in the Royal Infirmary at Edinburgh, there has of late years much greater success attended the extirpation of cancerous lips, than was ever before experienced ; and the only evident reason for it is, that during that period, the greatest number of such cases has been cut and cured in the hare-lip way. By this method, not only a very narrow cicatrix is left, but the deformity attending it is very inconsiderable. Another comfortable circumstance to the patient is, that he can always retain his spittle, or any other liquid, as well as before the operation, which never can be the case, when any considerable portion of the under lip has been extirpated in the ordinary manner.

Mr. Bell observes, that very extensive cancers in those parts admit of being treated in this manner. For the lip being composed of parts which yield very considerably, it cannot, but from experience, he imagined, how far they will stretch. He has seen some instances of more than one half of the whole under lip being taken off, and the remaining parts stretch so far as to be
cured

cured in the hare-lip form, with very little deformity being produced. In the same manner, in cancers of the breast, when the teguments are not wholly diseased, so much of them may, in general, be preserved, as by the assistance of a proper uniting bandage, may be got to cover a great part of the wound occasioned by the operation ; a circumstance which always renders the cure both more quick and certain than it otherwise would be.

After all the cancerous parts have been removed, if the hare-lip method has not been followed, the remaining wound should be dressed in the usual manner with dry lint ; and when, by a free suppuration coming on, the dressings fall off, the fore being then in a state exactly similar to a simple ulcer from any other cause, is to be treated accordingly, and a cure to be promoted as quickly as possible.

But some little time before the fore heals up, an issue should be introduced, so that it may discharge freely, before the cicatrix is quite formed. This, when the complaint has been of long standing, is particularly requisite ; as also when it seems to have been occasioned by any particular determination, in consequence of a redundancy of fluids in the system, either from suppressed catamenia, or any other cause.

As

As the best method of introducing such a drain, it has sometimes been advised to keep open the part whence a cancerous tumour has been extirpated. Mr. Bell, however, strongly suspects, that the irritation produced by an issue, directly upon the old seat of a cancer, might sometimes do mischief; and as all the advantages attending the practice are probably to be obtained from an issue on whatever part it is situated, he would therefore always advise the fore itself to be immediately healed up, and an issue to be introduced in some other convenient situation.

After cancers of the breast, we are told it has been a frequent practice in the Royal Infirmary, at Edinburgh, to put a seton into the side, near to the original seat of the disorder; and as it has been thought to produce advantages, and the side being, for such a drain, perhaps as convenient a situation as any, it may, therefore, be always preferred.

These, Mr. Bell remarks, are the different circumstances, in general, to be attended to in the extirpation of cancers; and as the entire removal of the diseased parts seems to be the only effectual resource in every case of cancer, there are only a few circumstances which should ever prevent

vent its being put in practice. These, in general, are,

1. When, by a long continuance of the disorder, cancerous ulcers, and scirrhus glands have appeared in several different parts of the body, the removal of one, or even of all these, as it would not, probably, prove effectual, so, in such circumstances, the operation, it is presumed, should never be had recourse to.

2. When the cancer adheres so firmly to the parts beneath, that the whole of it cannot be removed, at the same time that it might be dangerous to extirpate along with it any such parts as it is connected with, extirpation, in such a case, can never with propriety be employed. Thus, cancers adhering to the trachea arteria, or to the coats of a large artery, can never, without the greatest risque, be extirpated.

3. An operation can never be advisable, when the diseased organ lies either all together, or in part, out of the way of operation ; as is the case in cancers of the uterus, liver, rectum, &c.

When, from the existence of one or all of those causes, a cancer cannot, with propriety, be extirpated, the next consideration is, to palliate the different symptoms, so that the disease may be rendered as tolerable to the patient as possible.

The principal means for attaining this purpose being the abatement or prevention of pain, nothing should be either exhibited internally, or outwardly applied, that can have the smallest effect in exciting irritation or inflammation. For diet, therefore, the lightest vegetables and milk should be preferred to every thing else. No animal food should be allowed; neither spirits, wine, nor any fermented liquors. All violent exercise, and in short, whatever can heat, or inflame the blood, should be carefully avoided.

The fœtor attending cancerous ulcers being commonly very disagreeable, and the matter discharged usually very thin and acrid, it is always an object of great importance to correct those qualities. In this view, hemlock frequently proves serviceable, both as an internal medicine, and an external application. For internal use both the powder and extract are employed; but as the former, when properly prepared, seems to possess all the virtues of the plant, and is not liable to so many casualties in the preparation as the extract, it ought for that reason to be in general preferred. The quantity taken at a time, and the repetition of the doses, can never be determined but by trial; some patients being able to bear three times the quantity that is taken by others; so that this circumstance must always be regulated

regulated by the strength of the patient, and the state of the stomach at the time.

When green hemlock can be procured, a quantity of the juice, mixed with the common emollient poultice, makes a very convenient and effectual application for cancerous sores; and in the winter, when the juice cannot be obtained, the dry powder, made into a poultice in the same manner, answers the purpose tolerably well.

It is observed that the external use of cicuta proves generally more expeditious than its internal exhibition, in procuring a discharge of good matter; and in this respect it commonly also proves more effectual than even the carrot poultice, so much recommended for that purpose in different kinds of sores.

A good discharge being attained, the common unguentum cereum is the mildest application that can be used; and with it the parts should be dressed more or less frequently, according to the quantity of the discharge. But at every dressing, the greatest care should be had to its being done quickly, to prevent as much as possible the action of the air, which, in every ulcer, but especially in the cancerous, always produces disagreeable effects, both in occasioning irritation, and vitiating the nature of the discharge.

The violent shooting pains, which prove always so tormenting in cancerous cases, are frequently moderated by a continued use of cicuta. But when this does not happen, it becomes necessary to have recourse to opiates in large doses, which ought to be repeated at such intervals, as the violence and returns of the pain may require. Those pains are likewise sometimes relieved by the use of warm emollient fomentations.

By a proper attention to the different circumstances abovementioned, particularly to the preservation of a well-conditioned discharge, and by a well-timed use of opiates, very bad cases of cancer may be sometimes so far palliated, as to render them in some measure tolerable.

Of the C U T A N E O U S U L C E R.

CUTANEOUS complaints are so various, and the descriptions given of them by different authors so confused and intricate, that it is hardly possible from the several writings on the subject to collect any thing satisfactory. The appellation most common to this class of disorders

ders is the herpes, under which term is comprehended a variety of eruptive complaints, the distinctions of which are taken from very trivial circumstances, and such as do not, in any respect, influence the treatment. On examination, it will be found, that all the varieties of consequence may be comprehended under the four following species, viz. the herpes farinosus, pustulosus, miliaris, and exedens.

The first of these, viz. the herpes farinosus, or dry tetter, Mr. Bell observes, is the most simple both in its nature and treatment, of all the several species. It appears indiscriminately on different parts of the body, but most commonly on the face, neck, arms, and wrists, in broad spots of exceeding small red pimples. These are generally very itchy, though not otherwise troublesome, and after continuing a certain time, they at last fall off in the form of a white powder, resembling fine bran; leaving the skin below perfectly sound; and returning in the form of a red efflorescence, fall off and renew as before.

The herpes pustulosus appears in the form of pustules which originally are distinct, but afterwards run together in clusters. At first they seem to contain nothing but a thin watery serum, which afterwards turns yellow, and exuding over the whole surface of the part affected, at last

last dries into a thick crust or scab. When this falls off, the skin below frequently appears entire, with only a slight degree of redness on its surface; but on some occasions, when the matter has probably been more acrid, upon the scab's falling off, the skin is found gently excoriated. Eruptions of this kind appear most frequently on the face, behind the ears, and on other parts of the head, and occur most commonly in children.

The herpes miliaris breaks out indiscriminately over the whole body, but more frequently about the loins, breast, perineum, scrotum and inguina, than in other parts. It generally appears in clusters, though sometimes in distinct rings or circles, of very small pimples, which, from their resemblance to the millet-seed, have thence their denomination. At first, the pimples, though small, are perfectly separate, and contain nothing but a clear lymph, which, in the course of the disease, is excreted upon the surface, where it forms into small distinct scales. These at last fall off, and leave below a considerable degree of inflammation, that continues to exude fresh matter, which likewise forms into cakes, and so falls off as before.

The itching in this species of the complaint is always very troublesome, and the matter discharged from the pimples so tough and viscid,

that every thing applied to the part, adheres in such a manner, as to occasion a great deal of trouble and uneasiness to the patient, on its being removed.

The different species of herpes are commonly, in England, distinguished by the names of tetter, shingles, and ringworm; but the last is most frequently applied to this species of the disorder.

The herpes exedens, so called from its corroding the parts which it attacks, generally appears, at first, in the form of several small ulcerations, all collected into larger spots of different sizes and of various figures, with always more or less of an erysipelatous like inflammation. These ulcerations discharge large quantities of a thin, sharp, serous matter, which sometimes forms into small crusts, that in a short time fall off. But most frequently the discharge is so thin and acrid, as to spread along the neighbouring parts, and there to produce the same kind of ulcers.

Though these excoriations or ulcers do not, in general, proceed farther than the cutis vera, yet sometimes the discharge is so very penetrating and corrosive, as to destroy the thin, cellular substance, and sometimes even the muscles.

Mr. Bell observes, that it is this species of the disorder which should properly be termed the
depascent

depascent or phagedenic ulcer, from the great destruction of parts which it frequently occasions ; but by a piece of great impropriety, ulcers of the herpetic kind have most commonly been considered as connected with scurvy, and therefore have, by practitioners in general, been usually distinguished by the appellation of scorbutic. Whereas, nothing is more certain, than that herpes is a complaint generally, if not always connected with a state of the system, probably the most opposite of any, to that which takes place in the true scurvy. By the former of those states is meant the plethoric or inflammatory ; whereas, in the scurvy, a high degree of putrescency is well known to constitute the very essence of the disease.

Besides, the real scorbutic ulcer exhibits appearances perfectly different from the disorder now under consideration ; and the remedies necessary in the two diseases are no less opposite in their nature.

This species of herpes, at times, appears in every part of the body, but most frequently about the loins, where it often spreads to such a degree as to surround the whole circumference of the waist. It seems to be easily communicated by contagion, that is, by the application of the virus, either through the intervention of cloaths,

spoons, or other table utensils. But this is indeed the case, in some degree, with every species of herpes.

The cure of cutaneous complaints has of late years been greatly improved. Instead of the very tedious debilitating course of medicines, which were formerly used, it is now found that the greater number of those complaints is much more certainly and speedily removed by the use of local remedies only.

In the treatment of every disorder of this kind, the first and principal circumstance is, that not only the parts affected, but the whole surface of the body be kept as clean and perspirable as possible. For this purpose, nothing is of so much consequence as the frequent use of warm bathing, and gentle friction, with clean cloths, which, in the dry species of the complaint, may be applied even over the diseased parts. But in the others, especially where considerable ulcerations occur, the frictions can be applied only to such parts of the body as are not at the same time affected. When due attention is paid to this article of cleanliness, few or no internal remedies are ever necessary in the slighter species of herpes.

In the way of external applications, both in the mild and in the more inveterate species of

those disorders, drying and astringent remedies are most to be depended on. Of those the most simple is lime-water, which, in slight cases of dry tetter, often answers the purpose, but it seldom proves effectual in any of the others.

The different solutions of lead in the vegetable acid, often prove, in complaints of this nature, very effectual; and of those the watery solution of saccharum saturni, as directed in the case of inflammation, is always the most successful. It may be applied either in the form of cataplasms, or on soft linen rags laid immediately upon the parts. The latter is perhaps the more convenient method, and in those disorders, from its being more cleanly than poultices, it should therefore be preferred.

Though this be found in general a very useful application in those complaints, yet in some particular cases, which have shewn a great degree of inveteracy, Mr. Bell has sometimes thought that weak solutions of corrosive sublimate in water, have proved more beneficial. About ten grains of the former, to a pound of the latter, makes a very easy and efficacious wash for all such affections.

Decoctions of the different kinds of boles, and of the astringent earths, are also sometimes used with advantage in slight cases of this kind.

But, in general, the preparations of lead, as above directed, with the watery solution of corrosive sublimate, prove much more effectual.

Ointments prepared with *saccharum saturni*, and corrosive sublimate, have frequently likewise, in those disorders, been used with success; but they are not so cleanly as the watery solutions.

By proper attention to the different circumstances abovementioned, many of the milder complaints of the herpetic kind are often cured; but when the disorder is more inveterate, and especially when accustomed to discharge large quantities of matter, as frequently happens in the herpes exedens, other remedies are likewise necessary.

The more obstinate and virulent those disorders are, the greater attention becomes requisite to the promotion of a free discharge by the skin; for which purpose, with warm bathing, plenty of warm diluent drinks should be allowed. New raw whey answers in this view very well, and is likewise of use as a gentle laxative. The decoctum lignorum is frequently used with great advantage as a diaphoretic; and its efficacy may be greatly increased, by adding to each cup-full of the decoction, fifteen or twenty drops of the tincture of antimony.

When,

When, in this manner, two or three pounds of the remedy are taken at proper intervals, every twenty-four hours, it seldom fails of keeping up a very free perspiration.

As a gentle diaphoretic, likewise, Mr. Bell informs us that he has often observed great advantage from the use of antimonium crudum preparatum, given to the quantity of two drachms or so in the day, either in powder or in the form of an electuary. It commonly answers tolerably well by itself; but when joined with a small proportion of gum guaiac, it seems not only to prove more certainly sudorific, but goes off more readily by stool; a circumstance which, in some cases, renders their combination of service.

In patients of plethoric habits, in whom complaints of this nature frequently occur, laxatives are often of use; and as such, those of the cooling kind only should be used. Sea water, for this purpose, frequently answers exceedingly well; but to many patients, on account of its disagreeable taste, it cannot be exhibited in proper quantities. When this is the case, it may be supplied by cream of tartar; the most commodious way of using which is in the form of an electuary. Six or eight drachms of it in powder, with an equal quantity of sugar, being made into the consistence of a linctus, or of an electuary, with
the

the mucilage of gum Arabic, makes an easy dose of a very agreeable laxative.

Besides those internal remedies, an issue, in the more inveterate species of herpes, becomes always necessary, and should be one of the first things prescribed. For here, as in every other ulcer of long standing, where the constitution has been accustomed, by such drains, to throw off considerable quantities of superfluous fluids, an issue not only renders the cure of the disorder much more easy, but in reality more certain; and without this expedient, the sores, though healed up, are very apt to break out again.

In different eruptions of this kind, especially in the herpes exedens, considerable degrees of inflammation often occur; for the removal of which, warm poultices and fomentations are generally employed, but seldom or never with any advantage; and in no case does the superiority of saturnine applications, over the whole tribe of emollients in inflammatory affections, appear more evident than in this. For emollients almost constantly seem to increase the spreading of the secreted acrid humour, and thereby instead of removing inflammation, in such cases tend rather to promote it. On the contrary, the different saturnine applications appear not only to correct the acrimony of such humours,

humours, but from that circumstance, tend greatly to prevent their spreading so far as they otherwise would do.

In all superficial ulcerations of the herpetic kind, the saturnine and sublimate solutions in general prove effectual; but when the ulcers have penetrated deep into the substance of the muscles and other parts, Mr. Bell informs us, that he has found better effects from an ointment prepared with calcined zink; two drachms of which, in fine powder, were mixed with six drachms of axunge. This abates the inflammation which commonly takes place, and has often a considerable effect in changing to a purulent nature the discharge, which is commonly very thin and acrid.

The unguentum saturninum, when newly prepared, is also a very serviceable application for the same purpose. But Mr. Bell justly observes, that it ought never to be used after being long kept; as the lead seems thereby not only to lose its activity, which is generally the case with unctuous preparations, but this ointment, probably from its being prepared chiefly of axunge, or of wax and oil, without any of the antiseptic gums and resins, is much more apt to turn rancid than almost any other ointment in common use.

By

By a due continuance of the several remedies abovementioned, if proper attention be at the same time given to cleanliness, the most troublesome species of herpes will, in general, be extirpated. But in some instances, notwithstanding the use of all these, and of every other ordinary remedy, complaints of this nature continue obstinate.

In such cases, there is generally reason to suspect the concomitant existence of some other disease, which, on enquiry, is frequently found to be that of the venereal kind; the herpes very often appearing as a symptom of that disease. This, however, may be commonly known from the history of the complaint, and the situation of the eruptions; for all eruptions of this kind, which appear in the lues venerea, are constantly above some of the hard thin covered bones, as those of the cranium, sternum, and tibia. At least, in the beginning of the disorder, those are the parts chiefly affected; though, doubtless, in the more advanced stages of the disease, the whole surface becomes more or less tainted with it.

As soon as the complaint is discovered to be of the venereal kind, its cure must depend in a great measure upon the general treatment necessary in that disorder; so that by a proper use of mercury, with a continuance of the different remedies

medies already enumerated, all affections of this kind may in general be radically cured.

But on other occasions, when there is no cause for suspecting a venereal taint, Mr. Bell observes it sometimes happens, that even the slightest species of tetter resists all the common remedies, both internal and external, and perhaps too becomes more inveterate. In such cases, he remarks, there is frequently conjoined with the disorder now under consideration, the common scabies or itch; and when it happens to be so, as he has sometimes seen, a very disagreeable and troublesome disease is produced.

The itch being a disorder so well known, continues this author, its conjunction with herpes is commonly very easily detected, and when once it is ascertained, the cure must consist in the several remedies already recommended for herpes, together with such as are more particularly active in the cure of scabies; and of which, though great varieties are mentioned by different writers, yet none ever prove so certainly efficacious as sulphur. Mercury likewise, does, no doubt, often cure such complaints, as it does indeed the itch in all its stages; yet as it fails in many instances, which is seldom the case with sulphur when properly directed, the latter should, in general, be preferred.

When

When, however, in such cases, it may for some reason or other be thought proper to make use of mercury, Mr. Bell observes that an ointment similar to what in the dispensatories is termed *unguentum citrinum*, has, on many occasions, been found to answer exceedingly well. But as that ointment has commonly been ordered with too great a proportion of mercury, it frequently acts as a caustic, and causes a good deal of irritation. This effect, however, is easily prevented, whilst at the same time all the advantages of the remedy are preserved, by diminishing the quantity of mercury. Half an ounce of mercury dissolved in an equal quantity of strong spirit of nitre, to a pound either of axunge or of fresh butter, has been found a very suitable proportion.

By a proper and continued use of the several remedies recommended, but chiefly a due attention to cleanliness, almost every herpetic complaint may, at last, be removed.

It is observed, that in the *tinea capitis* a peculiarity occurs from the situation of the disorder. In this complaint, the hair, by occasioning a more considerable remora of the exuded matter, than any other species of herpes, produces a greater degree of acrimony, which sometimes gives rise to bulbous swellings about the roots of
the

the hair. Hence it has been imagined that those swellings, by being perhaps the first parts affected, tend to produce and support all the other symptoms of the disorder. It is therefore commonly recommended, as the first step in the cure of the tinea, to extract entirely all the hairs by the roots, either with pitch plasters, or some other adhesive application.

This practice, however, is always attended with a great deal of pain, sometimes produces very troublesome inflammations, and besides, is never in the least necessary in the first stages of the disorder. For though, in very long continued cases of tinea, the tuberosities at the roots of the hair sometimes become so considerable as to render the cure of those affections more tedious than it otherwise would be; yet, merely by keeping the hair very short, and the parts affected as clean as possible, the different remedies already enumerated almost always effect a cure, without having recourse to the extraction of the hair.

In no species of herpes does the watery solution of *corrosive sublimate* produce so remarkable good effects as in the *tinea capitis*; insomuch that, except in very inveterate cases, a cure may generally be obtained by the use of this remedy alone.

Issues have already been mentioned as being highly useful in all eruptive disorders of this kind; but in those complaints which, in childhood especially are so common, they seem to be still more necessary, and more useful, than in the advanced periods of life. For, as those children that are particularly liable to such eruptions, are for the most part of very gross full habits, it is extremely difficult to effect a lasting cure, without the use of adequate drains.

Indeed issues of themselves, with a proper attention to cleanliness, will very often, in the first years of childhood, cure all such complaints, without the assistance of any other remedy; nor do they prove so prejudicial to the constitution as the frequent repetitions of purgative medicines, which, in such cases, are so commonly used.

It has been objected to the use of issues in general, that they are very apt to become so far habitual as to render it dangerous afterwards to heal them up without considerable risque. But in children, this ought never to be admitted as any material objection against the practice. For after children have attained to the fifth or sixth year of age, when their solids are become more firm, and there is a less redundancy of fluids than before, there is not the same necessity for such drains, and it even might, in some instances, be
prejudicial

prejudicial to continue them longer. Accordingly we observe, that, about this period of life, many eruptive disorders which had before prevailed, entirely disappear.

Of the VENEREAL ULCER.

I Now proceed to those species of ulcers which are connected with, or depend upon some general disorder of the system. I shall first consider the venereal.

Venereal ulcers may be distinguished into two kinds, viz. those which appear as primary symptoms of the disease, and such as may more properly be considered as symptomatic. Of the former kind are chancres in general, whether upon the parts of generation, the nipples of the breasts, or on the lips and parts adjacent. Those ulcers also may sometimes be reckoned primary, which remain after the opening or bursting of such buboes as have arisen from an infection lately communicated, and before there is any probability of the whole system being affected.

Ulcers are considered as symptomatic, which appear in consequence of a general taint of

the habit. Of this kind are all those which succeed to old buboes, and such as arise with other venereal symptoms, a considerable time after infection. The parts on which those ulcers most commonly appear, are the throat, palate, nose, the parts immediately above the bones of the cranium, tibia, humerus, and other hard bones thinly covered with flesh.

In many cases, it is difficult to distinguish between those two species of ulcers; but to answer the purpose as much as possible, we must have recourse to information from the patient, and the appearances of the different sores themselves. If, soon after exposure to infection, an ulceration appears upon the part to which the virus was immediately applied, along with swellings of the glands in the course of the lymphatics, we may conclude that those are only local affections, and ought therefore to be considered as primary symptoms of the disease. Ulcerations of this kind are in general termed chancres. At first they appear as small miliary spots, which soon rise and form little vesicles, that upon bursting, discharge sometimes a thin watery fluid, and at other times a more thick yellow matter. The edges of such sores are generally hard and painful, and are, with the glandular swellings

above-

abovementioned, commonly attended with more or less inflammation.

Those ulcers which appear as symptoms of a long continued affection are always the most troublesome to the surgeon, and are to be known by their appearance, their situation, and by information from the patient. Ulcers of this kind break out immediately above the bones that are most thinly covered with muscles. They first appear in the form of a red somewhat purplish efflorescence, not circumscribed, but, in general, rather considerably diffused. This soon rises into a number of very small pustules, which ooze out a thin fretting serum. At first those pustules, when observed through a glass, appear perfectly distinct, but they afterwards run together, and form one large ulcer, the edges of which are commonly ragged and somewhat callous. There is also, generally, a light red appearance, which extends a considerable space beyond the sore, over the skin that does not seem to be otherwise diseased.

Sores of this kind have frequently a very remarkable appearance, being hollowed out as it were into the form of a cup, generally narrow and contracted at the bottom, with the edges extending gradually till they reach the outward circumference. But when carious bones happen to

lie at the bottom of the fores, they are then commonly filled up with troublesome fungous excrescences.

Venereal ulcers are not usually attended with much pain, at least, seldom so much as might be expected from their appearances : in some instances, however, it is otherwise. The discharge of all such fores, though at first thin, comes afterwards to assume a very particular and characteristic appearance ; being of a consistence rather more tough and viscid than good pus, with a very loathsome, though not the ordinary fetid, putrid smell, and a very singular greenish yellow colour.

Primary venereal ulcers, if attended to immediately on their first appearance, and before any absorption of matter has taken place, might doubtless be frequently removed without the assistance of any internal medicine, merely by converting an incipient chancre into the state of a simple ulcer, by burning or destroying the venereal matter contained in it with caustic. But as we cannot be absolutely certain whether some of the virus may not have entered the system, the cure of even the slightest chancre should never be trusted to any other means than mercury. For surgeons are seldom called in so early, and frequently not till the different ulcerations

tions are so considerably enlarged, when the practice could not readily prove effectual, and when it might sometimes even be dangerous to apply, so extensively, to such tender parts as chancres are commonly seated on, such irritating remedies as any of the more active caustics.

Mr. Bell informs us, that what he has generally found to answer, in every case of ulcerated chancre not attended with much inflammation, is, after wiping the sores as free from matter as possible, to dust them well with *mercurius precipitatus ruber*, finely prepared, and to apply a pledgit of any common ointment over all. This does not *commonly* occasion much pain or irritation, and has the effect of producing a kind of slough over the sore, which, in the course of a dressing or two, generally comes away, and leaves the ulcer perfectly clean.

A chancre being reduced to this state, the same author observes, would probably soon heal, though no other dressing than common cerate was applied. But lest any venereal matter should remain, he has always, after removing the dressings with the precipitate, been in the way of using the strong mercurial ointment of the Edinburgh Dispensatory, and to dress with it till the sores heal up.

In this manner, in general, all such ulcerations are soon cured, and with much less mercury inwardly, than if they were allowed to remain open for any considerable time.

By long continuance, however, and neglect of proper remedies, even those, at first apparently simple sores, assume all the appearances of such ulcers as depend upon a general infection; and as in reality they are then become such, their treatment must vary accordingly.

Ulcers of this kind, upon the penis especially, when of long standing, are very apt to become inflamed, and then, by the pain they occasion, prove often exceedingly troublesome. When the inflammation is considerable, blood-letting is sometimes requisite; but, in general, that symptom is easily moderated by a continued and proper use of the saturnine poultice. The inflammation being removed, the best remedy, in such cases, is the wax ointment, till a proper quantity of mercury has been exhibited, and then the sores commonly heal, without any farther application.

Of the S C O R B U T I C U L C E R.

THE judicious Dr. Lind, who has treated so accurately of the scurvy, describes ulcers of this kind by the following characteristics.

They afford no good digestion, but a thin fetid sanious stuff, mixed with blood; which at length has the true appearance of coagulated gore lying caked on the surface of the ulcer, and is, with great difficulty, wiped off or separated from the parts below.

The flesh underneath these sloughs feels, to the probe, soft or spongy, and is very putrid. No detergents or escharotics are here of any service; for, though such sloughs be with great pains taken away, they are found again at next dressing, where the same sanguineous putrid appearance always presents itself. Their edges are generally of a livid colour, and puffed up with excrescences of proud flesh, arising from below under the skin.

When too tight a compression is made, in order to keep the fungus from rising, the consequence is apt to be a gangrenous disposition; and the member never fails to become œdematous, painful, and for the most part spotted.

As the disease increases they at length shoot out a soft bloody fungus, which the sailors express by the name of *bullock's liver*, and indeed it has a near resemblance to that substance when boiled, both in colour and consistence. It often rises, in a night's time, to a monstrous size; and, although destroyed by cauteries, actual or potential, or cut smooth with a bistoury, in which case a plentiful hæmorrhage generally ensues, it is found, at next dressing, as large as ever. They continue, however, in this condition a considerable time, without affecting the bones.

The slightest bruises and wounds of scorbutic persons degenerate into such ulcers; their appearance, on whatever part of the body, is singular and uniform; and they are easily distinguished from all others, by being so remarkably putrid, bloody, and fungous.

In the cure of scorbutic ulcers, the principal object is to correct the putrid diathesis in the system. For this purpose vegetables of all kinds, but especially those of an acescent nature, with milk and whey, are found to be almost certain remedies. The different secretions, especially those by the skin and bladder, should be gently promoted; and mild laxatives, such as tamarinds and cream of tartar with manna, are also of great benefit.

The

The best external applications are the unguentum Ægyptiacum, and mel rosarum acidulated with spirit of vitriol.

If medicines be required, the Peruvian bark may be administered with great success; and it likewise answers exceeding well as an external application. Pledgits dipped in the strong decoction of the bark, and applied to the sores, have generally a great effect in correcting the fætor and putrescency of the discharge. But the best application for that purpose is the carrot poultice, which, when joined with the internal use of the bark and a proper regimen, for the most part corrects the putrescency so effectually in a short time, that the cure may soon be completed by dressing the sores a few days with pledgits of basilicon and red precipitate; and, if necessary, by introducing an issue, along with moderate compression by means of a roller.

Of the SCROPHULOUS ULCER.

BY scrophulous ulcers are meant those sores, which remain after the opening or bursting of scrophulous swellings in different parts of the body.

body. Ulcers of this kind never yield a good discharge, but afford, upon their first appearance, a viscid, glairy, and sometimes a whitish curdled matter, that afterwards changes into a more thin watery sanies. The edges of the sores are frequently, though not always, painful, and are constantly very much raised or tumified. While the scrophulous diathesis subsists in the constitution, such ulcers very often remain for a great length of time, without shewing any disposition either to heal or to turn worse; at other times they heal very quickly, and again break out in some other part of the body.

Till the disease is eradicated from the habit, all that should, in general, be done to the sores, is to give as free and open vents to the matter as possible, so as to prevent the formation of sinuses.

The best applications for scrophulous ulcers are the different saturnine preparations. Either the watery solution of saccharum saturni, Goulard's cerate, or unguentum saturninum, answers exceeding well, and tends greatly to prevent the scrophulous sores, which are otherwise very apt to occur; as likewise that inflammatory complexion which they so frequently put on, when relaxing applications are much used.

OF GUN-SHOT WOUNDS.

IN regard to the first accidents caused by a musket or pistol-ball, the most immediate considerations are, to extract the ball, or any other extraneous body which may have lodged in the wounded part; and to stop the hæmorrhage, if there be an effusion of blood from the rupture of some considerable artery.

To facilitate the extraction, it is frequently necessary to enlarge the wound; and if the ball has gone quite through, both orifices are to be dilated (provided the situation of the wounded part will admit of its being done with safety); and particular care must be taken to preserve both openings, especially that which is the more depending.

In order to get at the ball, or any other foreign matter, Mr. Ranby advises probing to be used as sparingly as possible. Where such practice is necessary, he would always prefer the finger, when it can be conveniently introduced. But when the finger cannot reach the object, he disapproves of thrusting in a pair of long forceps, with scarce any probability of success.

If

If the rupture of any considerable artery has occasioned a great effusion of blood, it will be necessary to restrain the hemorrhage with the needle; taking particular care, at the same time, that the hold be not elusive. In all contused wounds, however, bleedings from the smaller arteries are of real service, by unloading the clogged parts, cutting off the principal sources of inflammations, and thereby either totally preventing a fever, or at least rendering it moderate.

In respect of styptic applications, Mr. Ranby observes that there is no trusting to any of them, where the larger arteries are concerned; besides, that all such rather retard, than promote the cure. For, by obstructing the discharge of the sanies, which in all large wounds precedes digestion, this necessary operation of nature is suspended, while the pent-up sanies becomes a constant additional excitement to the fever.

Where the wounded person has not suffered any great loss of blood, it will be advisable to open a vein immediately, and take from the arm a large quantity. The bleeding must also be repeated, as circumstances may require, the second, and even the third day. This method greatly prevents pain and inflammation, lessens any feverish assaults, forwards the digestion, and obviates many symptoms that are wont otherwise
to

to interrupt the cure, and endanger the life of the patient. Even where the feverish symptoms run high, and there is almost a certainty that matter is forming, bleeding, in that state, is often of great advantage: for, the matter will thereby be sooner formed, and the quantity of it will be less.

During the first twelve days it will be proper to observe a cooling regimen, both in respect of the medicines that may be prescribed, and the diet requisite for the support of nature. It is likewise absolutely necessary that the body be constantly kept open. Unless, therefore, nature does this office spontaneously, a stool should be every day procured either by emollient clysters, or some gentle laxative, and whenever there is much pain in the wounded parts, immediate recourse must be had to opium.

In respect of external applications, all those which are of a hot and spirituous nature prove injurious. Let the first dressing be with digestive, or lint moistened with a little oil; and a very light bandage, if possible of thin flannel, should be used. The next dressing is to be performed with digestive warmed, over which should be applied the bread and milk poultice, mixed with a sufficient quantity of oil to keep it moist; and when there is great tension, and the wound large,

a fo-

a fomentation should be used. This course is to be continued till the sore is clean, and then it is to be healed in the common manner.

Should an inflammation seize any part, through the lodgment of a bullet, or any other foreign body, that could with safety have been more immediately extracted, all attempts for obtaining this purpose should be postponed, till the swelling has in some measure subsided, and the inflammatory disposition of the fibres nearly disappeared; unless the ball, or other extraneous body, lie at no great distance from the orifice; and there be, on that account, a certainty of removing this incumbrance without any material trouble to the patient.

Wounds that border on any considerable artery are very apt to bleed afresh upon motion, or the return of a free circulation of the blood into the part; and this is almost constantly the case when the slough begins to separate. For this reason, Mr. Ranby advises that we should never attempt to remove it by force; but wait with patience, till there be a perfect separation.

The same experienced author cautions the surgeon against being alarmed at the accident of arteries opening. The patient frequently gives warning of this event by complaining of great weight and fulness in the limb, which are always

accompanied with more or less pulsation in it; an infallible prognostic of the consequence. In whatever part the wound be, if it is attended with those complaints, Mr. Ranby advises the having immediate recourse to bleeding and the bark.

In all large wounds, especially those made by a cannon ball, there is constantly a great laceration of the parts, endued with an exquisite sensation. These are ever attended with excruciating pain, and the discharge of a gleety matter; which, if not restrained, often proves of pernicious consequence, by reducing the patient almost to a skeleton; there being no possibility of receiving a supply of nourishment proportioned to the discharge. In this state Mr. Ranby found that the bark, given in doses of a drachm each, and repeated every hour, or oftener if the stomach could bear it, repaired, in a surprising manner, the injury which the constitution had received. He adds, that we need be under no apprehensions of any mischievous effects from so liberal a use of it, should it even disappoint us in our views. He also observed that elixir of vitriol, taken three times a day, in a glass of water, proved of singular benefit, and was a very good assistant to the virtues of the bark. If the patient was costive, Mr. Ranby, to each dose of
the

the bark, added four or five grains of rhubarb, till that inconvenience was removed. When the bark ran off by more than four or five successive stools, he checked this effect by ordering a few drops of laudanum, or two spoonfuls of the diascordium mixture along with it.

Where the fore discharges a considerable quantity of gleety matter, is flabby, looks pale and glossy, (which appearances are often consequent to a loss of substance) the bark constantly relieves the pain, that is in this case predominant, and quite changes the complexion of the wound. Even though the patient had a dry tongue, great heat, a quick, low pulse, and a head hardly clear, Mr. Ranby has known the bark produce amazing good effects.

Of INJURIES of the HEAD from EX- TERNAL VIOLENCE.

IN considering injuries of the head, the first object that occurs is the scalp, which consists of the cutis; the membrana adiposa, or cellularis; the expanded tendons of the frontal, occipital, and temporal muscles, (forming a kind
of

of aponeurosis;) and the pericranium, or membrane which immediately covers the bones of the skull. This variety of parts of which the common tegument of the head is composed, renders it liable to a number of symptoms upon any external violence; and these ought to be carefully distinguished from each other; not only because they often arise from the particular nature of the part injured, but because they generally point out the most effectual means of relief.

Passing over the method of treating common incised wounds, as being universally established, I shall proceed to the consideration of lacerated wounds.

The former may be reduced to two kinds, viz. those in which the scalp, though torn, or unequally divided, still keeps its natural situation, and is not separated from the cranium, to any considerable distance, beyond the breadth of the wound; and those in which it is much detached from the cranium. The kind first mentioned requires no particular treatment; but both writers and practitioners are divided in opinion respecting the latter. Some recommend the immediate removal of such portion of the scalp as is perfectly detached from the cranium; whilst others advise its preservation. They who maintain the former opinion affirm, that when a large portion of the

scalp has been entirely separated from the cranium, and that for a considerable space, a reunion of them can never be produced; and therefore that any attempt to effect that purpose, by replacing the separated piece, will only retard the cure, by affording a lodgment for matter and sloughs, the intervention of which must necessarily prevent a coalescence. That in case of large wounds, or of those produced by great force, as we cannot be certain that no mischief is done to the parts within the cranium, the replacing the lacerated scalp may not only prevent our immediate enquiry into the nature of such mischief, but may conceal, at least for a time, such future appearances as might furnish indications for a surgeon's conduct.

They who advise the preservation of the separated scalp (by which is meant only such as is detached from the cranium, but is still connected with some part of the skin) found their practice upon a supposition that the lacerated parts will again unite; whence not only much time will be saved, but the patient will be spared a great deal of pain, and sustain far less deformity. That in respect of the immediate enquiry into the state of the cranium, it may be made before the scalp is replaced. That if there be no symptoms which indicate injury done to the parts under-

underneath, it would be absurd to act merely upon the presumption that such may afterwards arise; and that the formation of matter and sloughs, under the detached and replaced portion, will not, in general, under proper management, prevent its reunion.

On this subject the experienced Mr. Pott declares himself of opinion, that the preservation of the scalp ought always to be attempted, unless it be so torn as to be absolutely spoiled, or there are manifest symptoms of other mischief. This kind of wound, he observes, is sometimes very terrible to look at; and they who have not been accustomed to see it, may be inclined to think there is no remedy but excision; but he has so often made the experiment of endeavouring to preserve the torn piece, and has so often succeeded, that he would recommend it as a thing always to be attempted, even though a part of the cranium should be entirely bare, unless the two circumstances already mentioned render it improper or impracticable. The removal of it, he adds, necessarily produces a larger sore, which must require a good deal of time to heal, and must leave a considerable deformity: the preservation prevents both.

When such cases occur, it is therefore directed, that the surgeon be particularly careful to exa-

mine, whether there be any appearances or symptoms of any other kind of mischief besides what the scalp has sustained ; and if there be neither, that he clean the torn piece from dirt, or all foreign bodies, and restore it quickly, and as perfectly as possible, to its situation ; making use of plaster, bandage, and suture, together or separately, as he shall find them most convenient, and best fitted to the purpose.

It is indeed the general doctrine, that a suture in a wound of the scalp, especially a lacerated one, is unjustifiable practice ; but Mr. Pott observes, that though this remark be sometimes true, yet if it be invariably adhered to, it will now and then prevent a practitioner from receiving a very useful assistance. He tells us, that a stitch, made with a slip-knot, will sometimes hold the divided parts in such situation as will greatly expedite a cure : in many cases a very short time will answer the end, and the thread may be removed as soon as ever the purpose is accomplished, or the suture becomes either improper or useless.

In some cases this treatment is sufficient, but in others a perfect reunion is not to be obtained. Matter will be formed and collected in those places where the parts do not coalesce ; a circumstance, however, which does not necessarily
make

make any difference, either in the general internal intention, or in the event. This matter may be easily discharged, by one or two small openings made with a lancet : the head will still preserve its natural covering, and the cure will be very little retarded by a few small abscesses.

Mr. Pott would not be understood to mean, that it is universally advisable to return the loosened scalp, and to endeavour to procure its immediate reunion ; or that such an attempt will always succeed : he only means to affirm an opinion founded upon his experience, that the mere separation or detachment of the scalp, to however large an extent, is not a sufficient reason for cutting off any part of it in cases where no other mischief seems to have been done ; and that the attempt to procure a reunion with the parts from which it was separated, though it will sometimes fail, yet will more frequently succeed.

If, besides the scalp being detached, the skull, or parts within it have sustained injury, the immediate union of the skin becomes impracticable, and it would be highly improper to attempt it.

In concussions of the brain, Mr. Bromfield affirms that he has observed extraordinary benefit from the use of sudorific opiates. The fact is

so remarkable, and so repugnant to the common opinion of the effects of opium, that I shall quote his own words.

“ Though I may be censured (says he) for daring to recommend a doctrine so contrary to the present practice, yet I shall think it my duty to relate a few facts, in consequence of my having given *Dover's Powder* in hurts done to the skull and brain, and then say *liberavi animam meam*, and I leave every practitioner either to make trial of this method, or reject it, as he may think best for his patient.

“ I must acknowledge, that from prejudice and partiality to a practice admitted for many years, in consequence of a theory, which on a more critical examination does not prove true, and by halting between two opinions, I did not at first pursue either with firmness; for, in case the person was not greatly relieved, or rather freed from all complaint, by the first dose of the medicine, I then had recourse to evacuations, suspecting a second might do mischief: but considering the impropriety of this irresolute treatment of such cases, I determined boldly to persevere in the new method, which was this: in case of fulness from a plethoric habit, to take away a few ounces of blood, that by giving room in the vessels, the anodyne sudorific might
more

more surely act as intended, and, if the patient were costive, to procure a stool either by clyster, or some lenient aperitive medicine.

“ The warm bath is, in general, a good preparative for the powder; for by cleansing the skin, it causes the medicine to act more readily as a sudorific, and by lying between blankets, perspiration is greatly promoted during its operation: when this is over, the patient is to be put into well aired sheets. Should he be relieved by this process, the practitioner must naturally wish to keep up a gentle diaphoresis, which should be done by a continuation of a medicine of the same kind, such as the *vin. antimon.* with the *tinct. Thebaic.*; but, *Aut non tentes, aut perforce*, should be the maxim laid down: and to encourage those who choose to try this method, I must add, that in general every symptom of concussion of the brain has gone off on the powders producing a plentiful sweat; and that the medicine was generally continued, *pro re natâ*, till the patient seemed out of danger; and, where the symptoms have returned again, the medicine was repeated, and the patient did well.

“ I cannot say I ever knew any one the worse for taking this anodyne sudorific, though I have given it to hundreds; but, on the contrary, patients labouring under the symptoms of concus-

sion were by this method recovered, and two in particular with the fractures of the skull, without the operation of the trephine being performed."

Of the CATARACT.

VARIOUS have been the opinions entertained concerning the nature and seat of this disease. By some it was supposed to be a distemper of the vitreous humour; by others of the aqueous: by some it was conjectured to be a condensation of earthy particles; and by others a membranous film. Some have imagined it to be situated anterior, and others, posterior to the pupil. It was often confounded with the gutta serena, and sometimes even with the opacity of the cornea. At length, however, it is ascertained to be a disorder of the corpus crystallinum; to be in general absolutely confined to it, and to be attended with a greater or less degree of opacity.

Mr. Pott observes, that from the knowledge of the seat, and of one of the principal circumstances of its nature, we have been enabled to
direct

direct our attempts more rationally; but still from all that he has been able to collect, there are some material circumstances relative to the disease, which are not rightly, at least, not generally understood.

One general opinion, says he, among our ancestors, was, that every cataract had its different seasons of maturity, the term unripe implying a soft, and that of a ripe, a hard, or firm state of the crystalline.

Though this doctrine has been contradicted by some of the best modern practitioners, it not only still remains the opinion of many, but has a very considerable share in determining the preference of one method of operating over another.

Mr. Pott observes that the terms imply, and are generally understood to mean, that every cataract is at first soft through its whole substance; and that by degrees, in more or less time, it becomes hard and firm; or at least harder and firmer than the natural crystalline. Mr. Pott admits, that this latter circumstance may sometimes be true; but he affirms that it most frequently is not. Were this a merely speculative point, he remarks that it would be a matter of very little importance; but as a practical inference is drawn from it, that the early, or supposed

posed unripe state is an improper one for an operation, and that a patient therefore should wait for a later or ripe one, it becomes a matter of considerable consequence to such person whether he shall, or shall not continue blind all that very uncertain space of time. But farther, the same doctrine implies, that the first degree or appearance of obscurity, however soft the crystalline may then be, will certainly be followed by an induration of it; or, in other words, that the crystalline is first rendered soft only to become hard afterwards; that this soft state is not proper for an operation, because it would necessarily render such an expedient unsuccessful; and that an increased degree of opacity and obscurity may in general be regarded as marks of increased firmness: not one of which is true.

Mr. Pott remarks that the natural, sound, transparent crystalline is very far from being uniform in consistence through its whole substance: its external part is much softer, and more gelatinous than its internal; which therefore, although equally transparent, may be said to form a kind of nucleus, and is always of much firmer texture. From this sound and natural state, it is capable of several morbid alterations: it is capable of being dissolved, or of becoming fluid, without losing any thing of its transparency: it

is capable of being dissolved into an apparently uniform fluid, of a gelatinous kind of consistence, but which will be more or less opake through the whole. It sometimes becomes opake whilst it undergoes a partial dissolution, which renders the different parts of it very unequal in consistence; and it now and then, though very seldom, becomes opake through its whole substance, and yet preserves its natural degree of firmness.

Mr. Pott observes, that whenever the crystalline becomes softer than it should be, or tends towards such a state, it is certainly distempered, and unfit for perfect vision, whether it be opake or not, or whatever its degree of opacity may be; but whoever supposes that such softened and opake crystalline will necessarily, or even frequently, acquire firmness, or become hard by time, is exceedingly mistaken. Opacity, though now and then accompanied by what is called induration, is no proof of it, nor of any tendency towards such an effect; so far from it, that some of the most dissolved or fluid cataracts, and which have been in that state for the greatest length of time, are found full as opake as those of the firmest kind.

Whoever, continues Mr. Pott, has an opportunity of observing this distemper, and will embrace

brace it, will find that cataracts which have in a length of time gone through all those alterations of colour, which are said to indicate either un-ripeness, or ripeness, are often as perfectly soft as they ever could have been ; and, on the other hand, will sometimes find them what is called firm or hard very soon after the first appearance of obscurity. That is, to speak more properly, the former having been at first dissolved, have remained in the same state of dissolution ; and the latter, having been at first only partially softened, have been found in the same unequal state with a firm nucleus. When, therefore, Mr. Pott makes use of the term induration, he does it in compliance with the common method of speaking ; and not because he thinks it conveys, by any means, an adequate idea of the real alteration made in the state of the crystalline. It neither conveys an idea of the nature, nor of the extent of such alteration. With regard to the former, the term induration can, with propriety, be used only in opposition to a perfect or general distempered dissolution ; by much the majority of what are called firm cataracts, being far less firm than the same crystalline was before such alteration. And in respect of the latter circumstance, the extent of the mischief, it is subject to the greatest uncertainty ; being seldom or never

an

an induration of the whole body, but most frequently a firmish kind of nucleus, of greater or less size, contained within more or less of a gelatinous, or softer kind of substance: so that the nucleus is called firm only in opposition to what envelopes it.

Instead, therefore, of using the terms soft and hard in opposition to each other, and as implying different effects either of time or distemper on the crystalline, Mr. Pott observes, we should say, that dissolution or softening, in some degree, is by much the most common effect: that, except in some few instances, where that body retains its natural firmness while it loses its transparency, the most frequent consequence is a softening of its texture, either partial or total: and that seven times in nine, when the crystalline becomes opaque, and tends towards forming a cataract, it is more or less softened; sometimes equally through its whole substance, sometimes partially, having a greater or less portion left undissolved. This undissolved part, which always constitutes what is called a hard cataract, may indeed be called firm in opposition to the softer, by which it is surrounded; but even this very part is hardly, if ever, so firm as the center of the natural and sound crystalline.

It

It is agreed by all who have attentively considered the subject, that the colour alone of a cataract furnishes no satisfactory proof of its consistence; and that they which appear greyish, bluish, or like whey, are sometimes found to be firm and resistant, while those that are more equally white are often perfectly soft.

Mr. Pott recommends to the consideration of such as may have opportunity to examine, whether when the opaque crystalline is quite dissolved, so as to form a soft cataract, it is not, at the same time, somewhat enlarged, and whether when such dissolution does not take place, and what is called a hard cataract is formed, the crystalline is not in some degree lessened or shrunk.

Among the circumstances which induce him to be of this opinion, is the following, viz. when the pupil has been observed to be always in a state of dilatation, even when exposed to a strong light, and although capable of motion, yet never to contract in the usual manner, he has most commonly found the cataract to have been soft; and, on the contrary, when the pupil has been capable of full and perfect contraction over the cataract, he thinks it has most commonly proved firm; and this difference he has more than once observed in the different eyes of the same person. The greater degree of facility with which
the

the firm cataract quits its place, and passes through the pupil upon the division of the cornea, does not lessen the probability of this opinion. Mr. Pott also wishes that they who have opportunity, would enquire, whether the cataracts which have been found perfectly soft, have not, in general, become gradually more and more opake by very slow degrees, and, in length of time, the patient feeling little or no pain : likewise whether such as are firm do not, in general, become hastily opake ; and are not preceded, or accompanied by severe, and deeply-seated pain in the head, particularly in the hinder-part of it.

What has hitherto been said chiefly regards the theory of the distemper, and may therefore, perhaps, be reckoned of little importance ; but Mr. Pott observes, that when the influence which those opinions may have, and indeed have had on practice, is considered, it will be found to be a matter of some consequence.

Mr. Pott observes, that since the operation of extracting the cataract, instead of depressing it, has been introduced into practice, it has been the humour to exaggerate all the objections to which the latter has been said to be liable ; and that in such a manner, that they who have not had frequent opportunities of seeing business of this kind, fall, without reflexion, into the prevailing

vailing opinion, seem to wonder that the operation of couching should ever have had any success; and at the same time are, from the accounts given, inclined to believe, that the extraction is always safe, easy, and successful.

The objections made against the operation of couching, at least those which have any apparent plausibility, Mr. Pott observes, are reducible to four.

The first is, that if the cataract be perfectly soft, the operation will not be successful, from the impossibility of accomplishing the intention of it.

The second is, that if it be of the mixed kind, partly soft, and partly hard, it will also most probably fail of success, not only from the impracticability of depressing the softer parts, but also because the more firm ones will either elude the point of the needle, and remaining in the posterior chamber, still form a cataract; or getting through the pupil into the anterior chamber, will there bring on pain and inflammation, and induce a necessity of dividing the cornea for their discharge.

The third is, that if the cataract be of the firm solid kind, and therefore capable of being depressed, yet, in whatever part of the eye it shall happen to be placed, it will there remain undif-

undissolved, solid, and opaque ; and although removed from the pupil, yet prove some hindrance to perfect vision.

The fourth objection is, that however successfully the depression may have been accomplished, yet that the operation will necessarily occasion such disfrangement of the internal parts of the eye, as must cause very considerable mischief.

Mr. Pott observes, that these objections, if they have any real weight, are of equal force in every species of cataract ; and therefore are the more worthy of our attention ; since, if they be founded on truth, they render the operation improper : but if they be not, misrepresentation and fashion should never induce us to lay aside any means which have been, and still may be advantageous to mankind.

The first and second, Mr. Pott informs us, he can from frequently repeated experience affirm not to be true. He means that the operation of couching will not necessarily, or even generally be successful, merely because the cataract shall happen to be either partially or totally soft. On the contrary, although those states will prevent perfect depression, yet, by the judicious use of the needle, a recovery of sight, the true end and aim of the operation, will be as certainly and as

perfectly obtained, as it could have been either by depression or by extraction in the same subject; and that generally without any of the numerous and great inconveniencies which most frequently attend the latter operation.

The third objection, our author observes, is specious, and therefore very generally credited. That it never happens, he will not take upon him to say, because so many have asserted it. But, he adds, when we consider how few have written from their own examination and experience, our faith will not be quite implicit. He is certain from repeated experience, that this opinion has not that foundation in truth which it is generally supposed to have; and that it has been hastily embraced without sufficient enquiry.

In prosecuting the evidence on this subject, Mr. Pott remarks, that when the opaque crystalline is in a state of dissolution, or the cataract is what is called perfectly soft, if the capsula of it be freely wounded by the couching-needle, the contents will immediately issue forth, and mixing with the aqueous humour, will render it more or less turbid; sometimes so much as to conceal the point of the needle, and the iris of the eye from the operator.

This is a circumstance, he continues, which has been observed by most operators, and has been mentioned by many writers; but it has always been regarded as an unlucky one, and in some degree preventive of success; which is so far from being the fact, that respecting this circumstance merely, all the benefit that can be derived from the most successful depression, or extraction, most frequently attends it; as Mr. Pott has seen in numerous instances.

The aqueous humour, however turbid it may become, will in a very short space of time, be again perfectly clear; and if no disorder of the capsula of the crystalline, previous or consequential, prevents, the rays of light will pass without obstruction through the pupil, and the patient will be restored to as perfect vision as could have followed the most successful operation of either, or of any kind in the same subject, and under the same circumstances.

When the cataract is of the mixed kind, partly soft, and partly hard, the immediate effects of the needle are somewhat different: the soft part of the cataract being less in quantity, as well as generally less soft, the aqueous humour is less turbid; and the firm part or parts of the crystalline will be very visible. In this state, those former parts will very frequently elude the at-

tempts made by the needle to depress them ; and will therefore remain in the posterior chamber. This is also reckoned one of the unfortunate circumstances ; but though to an operator not aware of, nor acquainted with the consequence, it may have all the appearance of being so, yet, as Mr. Pott observes, it really is not ; the true end and aim of the operation not being thereby necessarily frustrated. In this case, if the needle has been so used as to have wounded the capsula very slightly, it will sometimes happen, that the firm part of the crystalline will remain in its nidus, and still form a cataract, which may possibly require a re-application of the instrument. This, Mr. Pott observes, is the worst that can happen, and happens indeed very seldom. For if the capsula be properly wounded, so that the aqueous humour be freely let in, the firm part or parts, though very visible at first, and preventing the passage of light through the pupil, will in due time, in some longer, in others shorter, gradually dissolve, and at last totally disappear, leaving the eye as fair, as clear, and as fit for vision as any the most successful operation could have rendered it.

In order to ascertain the fact with greater certainty, Mr. Pott, when he has found the cataract

to be of the mixed kind, has sometimes not attempted depression, but has contented himself with a free laceration of the capsula; and having turned the needle round and round between his finger and thumb, within the body of the crystalline, has left all the parts in their natural situation. In those cases he has hardly ever known them fail of dissolving so entirely as not to leave the smallest vestige of a cataract. In a few instances, where he has had fair opportunity, he has pushed the firm part through the pupil into the anterior chamber, where it has always gradually and perfectly dissolved and disappeared, without producing any pain or trouble during the whole of that time.

Mr. Pott observes, that if the remarks above-mentioned be well founded, some other important consequences will result from them.

First, if the soft cataract will, when its capsula is properly wounded, mix with the aqueous humour, and undergo so perfect a dissolution and absorption, as to leave the eye fair, clear, and fit for vision, and which he has often experienced beyond any doubt, it will then follow, that the softness of a cataract is so far from being an unlucky circumstance, that it is rather a fortunate one; as it enables the patient to receive the more early assistance; and that from an operation at-

tended with less pain, and a less violation of parts, than a firmer one would necessarily require.

Secondly, when the cataract is of the mixed kind, and which therefore frequently baffles all the attempts toward depression, the firmer parts may very safely be left for dissolution, and vision be thereby restored.

Thirdly, when the cataract shall happen to be of the firmer kind, and during an unsuccessful attempt to depress, get through the pupil behind the cornea, disappointment will be so far from being the consequence, that if no other injury has been done to the parts within, than what such attempt necessarily required, the displaced crystalline will gradually dissolve and disappear; and the patient will recover his vision as perfectly as he could have done by any operation.

Mr. Pott remarks, it may be objected that what he has alledged tends only to prove, that both the soft and mixed cataract, when blended with the aqueous humour by the laceration of the capsula, will dissolve; but the firm one will not, and therefore must remain, wherever placed, a solid opaque body.

To this objection he answers, in the first place, that if what has been said relative to the soft, and to the mixed cataract be true, he cannot
help

help thinking that it is very advantageous. In the second place, that the opinion concerning the indissolubility of the displaced crystalline has, he thinks, been taken up, and propagated without sufficient authority from experiment, and rests merely on a few accidental observations, which are by no means satisfactory. In the third place, that so far as his own enquiry and observation go, he is satisfied that it does dissolve wherever placed, provided it be perfectly freed from its attachment in its natural nidus.

Mr. Pott observes, that both men and books mention firm, hard, entire, uniform cataracts, as if they were equally so with those which are found in the eye of a boiled fish. Whence they borrow this idea, he says he knows not, unless it be from boiled fish; certain he is, that it is not from nature.

Let any man, continues he, examine the most firm, opake crystalline taken from the eye of a living person, and which, from its firmness, passed out through the pupil and the divided cornea with the greatest facility, he will generally find it to be in figure, size, and consistence, exceedingly unlike either to the natural and sound crystalline, or to one rendered opake by heat; and he will also find that such alteration of shape and size is owing to a partial dissolution of its surface,

particularly its interior one. In short, if he examines it carefully, and without prejudice, he will see, that what he (Mr. Pott) calls an entire, firm cataract, is most frequently little more than the nucleus of an opaque crystalline.

If a man, Mr. Pott observes, might be allowed to argue in a case of this kind, a priori, he might very reasonably ask, why should the corpus crystallinum, which, although opaque, is, while in its natural situation, and enveloped in its proper capsula, so prone to dissolve, be supposed to be as prone to induration, immediately upon being removed from its place.

The most strenuous advocates for extraction, he remarks, must admit, that a portion or portions of a firm cataract, which they have been obliged to leave behind in the operation, dissolve and disappear in due time. It is, says he, a fact not to be contradicted: but the same people alledge that the entire cataract will not. What idea they who argue thus, have of an entire cataract, Mr. Pott knows not; they may possibly conceive it to be depressed, still remaining enveloped in a firm capsula, and therefore to remain indissoluble. But if they would reflect on the extreme firmness of the capsular membrane; on the necessary action of the couching needle, when applied to it, and on the different consistence

ence of the different parts of every, even the most opaque and firm cataract, they must see that it is only a portion of a cataract, however firm, which can in general be depressed.

One of the arguments adduced by some of the late writers, in favour of extraction, is, that as the crystalline *must be destroyed*, if it be only displaced, it had better be removed. But, observes Mr. Pott, how can it be said to be destroyed, if it be only displaced, and remain indissoluble? Let them, continues he, take which side of the argument they please, they must be wrong. For if the diseased crystalline remains, though depressed, a solid body within the eye, how can it be said to be destroyed? and on the other hand, if it be destroyed in the operation of couching, it must be by dissolution; and therefore cannot remain.

The last objection to the operation of couching is, that it must necessarily derange and violate the internal parts of the eye, particularly the vitreous humour. Mr. Pott observes, that if what he has said on the subject of the perfectly soft cataract as well as on that which is partially so, be true, the greater part, if not the whole of this objection, will cease, with regard to those two; and it will be principally, if not totally confined to that which is called firm and hard, and
which,

which, by its resistance to the instrument, will admit of being placed in the inferior part of the eye.

In performing this operation, the needle may certainly be so used, as to do considerable mischief; but then it must be from the unskilfulness or awkwardness of the operator, and which may be the case of every operation in surgery. But, says Mr. Pott, is an operation justly chargeable with the bad consequences deducible merely from its having been ill executed?

Mr. Pott admits that much mischief has been done by attempts to couch; but in the first place, they have almost always been the consequence of want of judgment, or want of dexterity in the operator; and in the next place, even under the most exaggerated representations, they are by no means equal to what has frequently been the consequence of attempts to extract.

This experienced practitioner observes, it may possibly be supposed, that he has conceived a prejudice against the operation of extraction. Of this he is not conscious. He has sought and embraced every opportunity which a public hospital, and many years practice have afforded him of operating in both ways, and of comparing the consequences. He has seen many of the patients of others, not only of the gentlemen of the profession,

feſſion, but of moſt of the itinerant operators, and is thereby convinced, that the greater part of the objections to the operation of couching are invalid, have not been the reſult of unprejudiced experience, or a candid regard for truth; that only the fair and prosperous ſide of the queſtion, regarding the operation of extraction, has been induſtriouſly exhibited, while its manifold failures and ill conſequences have been as induſtriouſly concealed; and that upon a fair detail and compariſon of all the advantages and diſadvantages, conveniences and inconveniences attending each, the preference will be found juſtly due to the needle. To inconveniences and diſappointments Mr. Pott obſerves that both operations are too liable; but from the moſt cool and candid attention to fact, he is convinced that the former are much greater, and the latter much more frequent, in the operation of extraction, than in that of depression, executed with the ſame degree of judgment.

Of the FISTULA LACHRYMALIS.

MR. Pott, whose name I have so often occasion to mention, and who has contributed so much to the improvement of surgery, has of all writers treated the most usefully of this disease. He observes that the ancients were in general so little acquainted with the anatomical structure of the parts concerned in this disorder, that both its cause and seat have been very erroneously represented by them. Other diseases, very different both from this and from each other, have been confounded under the same general appellation, and the means made use of toward obtaining a cure, being adapted to such misconceptions, were rough, painful, and most commonly ineffectual.

The fluid which constantly moistens the eye, was supposed to be secreted by that small eminence in the inner angle, now called the caruncle, and to flow thence upward through the puncta lachrymalia. The caruncle was by many thought to be the seat of the disease in question, which was said to be produced, either by defluxion from the brain on this part, by an abscess formed within the body of it, or by a lodgment of the tears, become

become acrid and corrosive in consequence of stagnation ; while others considered it as a kind of encysted tumour. The swelling in the inner corner of the eye, the frequently attendant ophthalmia, the involuntary flux of serum down the cheek, the excoriation of the eye-lid, and the discoloured discharge upon pressure, strengthened their opinions, and confirmed their prejudices.

They who supposed it to be caused originally by a defluxion of the inflammatory kind, tending to produce an abscess, had recourse at first to those general methods and means which were thought most likely to prevent such consequence ; which not answering, they proceeded to open the supposed abscess, and to endeavour to cause a digestion of it. On the other hand, they who supposed it to be an encysted tumour, attempted the eradication of it either by the knife, caustic, or cautery ; and all of them taking it for granted, when the discharge was apparently purulent or much discoloured, that the bone was rotten, advise the use of escharotic applications, or the hot iron to destroy the callosity, and to dry and exfoliate the caries ; and those methods failing, as they frequently must, they pronounced the disease to be incurable.

Mr.

Mr. Pott observes, that a more minute and careful examination into the anatomy of the parts has given us a more true idea of the disorder, and furnished us with a more rational, as well as a more successful method of treating it. It is now ascertained that the caruncle is not the organ which secretes the tears, but that this office is performed by a gland, situated near the outer corner of the eye ; that the lachrymal fluid is in its nature perfectly innoxious ; that an obstruction in the nasal duct is most frequently the primary and original cause of the complaint ; and that its seat is in the sacculus lachrymalis.

Upon these principles, the modern practitioners have endeavoured to find out some means by which the obstruction may be removed, and the parts restored to their healthy and natural state, without such pain, destruction, and deformity, as the ancient methods occasioned ; or, these failing, to establish a new artificial passage, which may in some measure supply the place of the natural one.

In order to obtain a clearer idea of the nature of this disease, it will be proper to take a short view of the parts round the orbit of the eye, which the author abovementioned has delineated with great perspicuity.

That

That the motions of the eye-lids may be performed with ease, and that the tunica cornea may kept constantly clean, the surface of the eye is continually moistened by a fine limpid fluid, which is derived principally from a large gland, of the conglomerate kind, called the glandula lachrymalis, lying in a small depression of the os frontis, under the upper edge of the orbit, near the outward corner of the eye ; its excretory ducts, or those by which it discharges the secreted fluid, piercing the tunica conjunctiva, just above the cartilaginous borders of the upper eye-lids.

By irritation from any sharp particles, a large quantity of this fluid is immediately secreted, and by the motion of the eye-lids is derived over the surface of the eye. Sometimes also the passions of the mind produce an immediate increase of this lymph, which is then strictly and properly called tears. A constant secretion of too large a quantity causes a disease, called epiphora ; and a deficiency of it makes the motions of the lid difficult and painful.

The edge, or border of each eye-lid, is formed by a thin cartilage, the figure and consistence of which keep the lids properly expanded : they are covered by a fine membrane, and are called cilia.

lia. Upon every motion, their internal edges sweep over the whole surface of the cornea.

At the extremity of each of those cartilaginous borders of the eye-lids, on the side next the nose, is a small papilla, or eminence ; and in the middle of each is a small hole, or perforation, which being made in the cartilage is not liable to collapse while the parts are in a sound state, but remain always open. They are called the *puncta lachrymalia*, and their office is to receive the lachrymal fluid, as it runs off the cornea along the edges of the eye-lids, thereby preventing it from trickling down the cheek. That there may be no impediment to the execution of this office, during the time of sleep, as well as that of being awake, the internal edges of the cilia do not come into immediate contact with each other in the point where those orifices are.

From each of those *puncta lachrymalia* proceeds a small membranous tube, which soon enter or form a pouch or bag, near the inner angle of the eye, just below the union of the two lids, under the *musculus orbicularis palpebrarum*. This bag is called the *facculus lachrymalis*, and its office is to receive all the lymph brought by the *puncta* and ducts. The upper part of the *facculus* lies in an excavation, formed partly by the nasal process of the *os maxillare superius*, and partly

partly by the os unguis. The lower part of it is confined in a long channel, and forms a tube or duct, which descending obliquely backward, communicates with the cavity of the nose, behind the os spongiosum superius, by an opening, the size of which is somewhat different in different subjects.

This passage is called the ductus ad nares, or the ductus nasalis, and through it whatever is received by the sacculus from the puncta, in a healthy state of those parts, passes into the nose.

The membrane that lines this sacculus and duct, resembles in its structure the membrana pituitaria narium; and from its surface is secreted a clear viscid mucus, by which the sacculus and passages are constantly moistened and kept pervious.

While the parts are in a sound state, the fluid secreted by the lachrymal gland, passes off through the puncta, sacculus, and duct into the nose, without any trouble; but when they are in a diseased state, the case is otherwise.

This membrane, like all other vascular parts, is liable to inflammation, by which it is often so thickened as to obstruct the nasal duct, and thereby much impede, or totally obstruct the passage of any thing through it. In consequence of such an obstruction, the sacculus is filled by

its natural mucus, and the derivation of the serum from the lachrymal gland through it being thus prevented, runs off from the eye-lid down the cheek. This obstruction continuing, and the mucus still lodging, the sacculus is dilated, and produces that tumour in the inner corner of the eye, and that discharge, upon pressure, which characterise the disease in question, and in conjunction with several other symptoms prove its seat to be in the lachrymal sac, and nasal duct.

Mr. Pott observes that though the seat of this disease be the same in almost every subject, yet its appearance is very different in different persons, and under different circumstances. Those variations depend principally on, 1, The degree of obstruction in the nasal duct. 2. The state of the cellular membrane covering the sac. 3. The state of the sacculus itself. 4. That of the bone underneath. 5. The general state and habit of the patient.

Sometimes a serous kind of defluxion, by which the lining of the sac and duct are so thickened as to obstruct the passage of the fluid into the nose, constitutes the whole complaint; and the cellular membrane on the outside not being diseased, there is no appearance of inflammation.

In this case, the duct is stopped, and the sacculus dilated,

dilated, but without any alteration in the colour of the skin. A fulness appears in the corner of the eye next to the nose; and upon the application of a finger to this tumour, a clear viscid mucus is discharged through the puncta lachrymalia; the patient feels no pain, nor any inconvenience, except what is produced by the discharge of this mucus, and by the trickling of the lymph down the cheek.

In some cases the mucus is not perfectly and constantly clear, but is sometimes cloudy, and looks as if it had in it a mixture of milk or cream. On awaking, some of it is generally found in the corner of the eye; and the eyelashes being smeared over with it during sleep, they most commonly adhere together in the morning.

This is the most simple state of the disease, and what the French call the hernia, or hydrops sacculi lachrymalis. It is frequently met with in children who have been ricketty, or are subject to glandular obstructions; and in this state it sometimes remains for some years, subject to little occasional alterations, as the health or habit shall happen to vary; the sacculus being sometimes more, sometimes less full and troublesome, the mucus which is pressed out sometimes more, sometimes less cloudy, and now and then attended with

a slight ophthalmy, or an inflammation of the eye-lids, but which by common care is easily removed.

If the sacculus be not much dilated, the discharge small, and produced only by pressure, the chief inconveniencies are the weeping eye, and the gumming together of the lids, after sleeping; but these symptoms, by proper care, may be prevented from becoming very troublesome; and if the disease makes no farther progress, may be so regulated as to render any more painful process totally unnecessary.

If the dilatation be considerable, the swelling is more visible, and the quantity of mucus is greater; in this state, it is more frequently mixt and cloudy, and also more troublesome, from the more frequent necessity of emptying the bag. But if the patient be adult, it may, even then be kept from becoming very inconvenient.

If an inflammation supervene, the tumour is considerably increased; the discharge is greater, as well during sleep as upon pressure; the skin covering it loses its natural whiteness and softness, becomes hard, and acquires an inflamed redness; and with the mucus a mixture of something, which in colour resembles matter, is discharged, especially if the pressure be made with any force, or continued for a little time. This
circum-

circumstance, added to the painful sensation, and inflamed appearance of the parts, has given rise to a supposition, that in this state there is either an ulcer, or an abscess within the sacculus or duct.

This being an opinion which, though it may sometimes have foundation in truth, is in general entertained too hastily, and being also the principal source whence most of the mistakes concerning this disease have sprung, Mr. Pott considers it with particular attention.

He observes, that while the lachrymal sac is free from disease, and the ductus ad nares open, the natural mucus is nearly limpid in colour, small in quantity, and passes insensibly into the nose with the fluid from the lachrymal gland. But when by the obstruction of the nasal duct, that passage is denied, it necessarily lodges in the sacculus. By irritating its containing bag, it is increased in quantity, altered in colour, and discharged at the puncta lachrymalia ; as it either becomes too much for the sac to contain, or as it is forced out by pressure. This, Mr. Pott remarks, is a succinct account of the true nature of the disease, and such as will afford a solution of all its symptoms and appearances, without any recourse to either abscess or ulcer, circumstances which very seldom, if ever, attend it.

That which is mixed with the clearer part of the mucus, and which from its pale yellow hue is supposed to be matter, is not really such, but mucus, which in this, as well as in several other parts of the body, does, either by being confined beyond the necessary time, or by inflammation, or irritation of the gland or membrane which secretes, or contains it, or even from general affection of the habit, assume a yellow, purulent colour, where there is neither abscess, nor ulcer in the part whence it comes.

Mr. Pott observes, that the inflammation of the cellular membrane covering the sac, is a circumstance which makes considerable difference, both in the appearance of the disease, and in its requisite treatment. In some cases it is confined entirely to the surface of the tumour in the corner of the eye; while in others, it spreads farther, affecting the eye-lids, cheeks, and side of the nose.

When the parts are in this state, the mucus within the bag has generally the appearance of being matter, that is, it wears a deep yellow colour, and is of a more thin consistence. If the puncta lachrymalia be naturally large and open, and the inflammation confined to the surface of the sac, its contents will pass off pretty freely, and the skin will remain entire. But when the skin
covering

covering the lachrymal bag has been for some time inflamed, or subject to frequently returning inflammations, it most commonly happens, that the puncta lachrymalia are affected by it, and the fluid, not having an opportunity of passing off through them, distends the inflamed skin, which at last becomes sloughy, and bursts externally. The discharge which used to be made through the puncta lacrymalia, while the skin was entire, is now made through the new opening, and by excoriating the eye-lids and cheek, increases the inflammation, and gives the disease a much more disagreeable appearance. The former of those states is what the ancients called the simple, imperfect, or anchylops; and the latter, the perfect, aigylops, or ægylops.

In some the matter bursts through a small hole, and after it is discharged, the tumour subsides, the neighbouring parts become cool, and though the skin covering the sacculus be sloughy and foul, yet there is no reason to believe that the sac itself is much diseased below. In others, the breach is large, the skin remains hard and inflamed, and from the appearance of the fore, there is reason to suspect that the whole inside of the bag is in a diseased state. In some cases, which have been much neglected, or irritated by improper treatment, the cavity of the sacculus

seems to be filled with a loose ill-natured fungus, which gleans largely, and produces inflammation and excoriation of all the adjacent parts.

This disorder is sometimes also attended by another circumstance, viz. a carious state of the bones. This was formerly supposed to be frequent, and was the principal reason for the free use of caustic, cautery, and scalpra. But since the nature of the disease has been more accurately investigated, this circumstance is found to be very rare. When the fistula lachrymalis is a symptom of the lues venerea, as it sometimes is, the bones are indeed often carious; but then the fistula is not the original complaint, but produced secondarily, and is a consequence of the diseased state of the os ethmoides, and ossa spongiosa of the nose. It is not curable by any local means or applications, but depends entirely on the cure of the disease, of which it is a symptom.

Mr. Pott informs us, that he has seen an abscess after the small-pox, which by falling on the lachrymal bag, has made it all slough away, and leave the bones bare; which circumstance he has also seen attend the free use of strong escharotics applied to destroy what is called the cyst. But without the accession of some other disorder producing it, or the most absurd method of treating the complaint, Mr. Pott is of opinion that a caries

of the bones will very seldom be met with. Indeed, the combination of other diseases, either of the general habit, or affecting the same, or the neighbouring parts, often makes a very material difference, not only in the appearance of the disorder, but in the prognostic, and the proper method of treating it, which should therefore always be carefully examined.

Mr. Pott is of opinion that this disease, in its primary and most simple state, consists in a detention or lodgement of mucus in the sacculus lachrymalis, in consequence of an obstruction of the natural passage from that bag into the nose; that by means of this lodgement the sacculus is distended, irritated, and sometimes inflamed; that the fluid which passes from the lachrymal gland over the eye to the puncta lachrymalia, being prevented by the fulness of the sac from getting into it, runs down the cheek, and therefore that the characteristic marks of the disorder, when recent, are a small tumor in the inner corner of the eye, an involuntary flux of serum down that side of the face, and a discharge of mucus thro' the puncta lachrymalia upon pressure.

This lodgement being originally produced by the stoppage of the natural duct, it follows that the first curative intention is, the removal of that obstruction; which is sometimes practicable, but

more often not; the degree of obstruction, the time of its continuance, the state of the adjacent parts, and some other circumstances rendering it more or less so in different subjects.

For elucidating this disease with the greater perspicuity and precision, Mr. Pott divides it into four general heads, or states, under which all its inferior distinctions may be comprehended.

The first consists in a simple dilatation of the sacculus, and obstruction of the nasal duct, discharging, upon pressure, a mucus either quite clear, or a little cloudy, the skin covering the bag being entire, and perfectly free from inflammation.

In the second, the tumour is somewhat larger, the skin which covers it is in an inflamed state; but entire, and the discharge made through the puncta lachrymalia, is of a pale yellow, or purulent colour.

In the third, the skin covering the sacculus is become sloughy, and bursts, by which means the swelling is in some measure lessened; but the mucus which, while the skin was entire, used to be pressed out through the puncta lachrymalia, now discharges itself thro' the new aperture. The ductus ad nares, both in this and the preceding state, is no otherwise diseased than by the thickening of its lining.

In

In the fourth, the passage from the sacculus lachrymalis into the nose is totally obliterated, the inside of the former being either ulcerated or filled up with a fungus, and attended sometimes with a caries of the bone underneath.

Mr. Pott observes that the ancients, who supposed this disorder in its first state to be an inflammatory defluxion from the brain on the caruncle, tending to suppurate, directed their first attention to prevent such consequence. For this purpose they employed phlebotomy, cathartics, issues, setons, collyria, and refrigerant applications of all sorts; and those not succeeding, they had recourse to such as they imagined would hasten the suppuration of the supposed abscess.

By the improper use of medicines of the latter kind, he remarks, it frequently happened that the skin became inflamed and burst; the discharge which necessarily followed this accident, with the heated appearance of the adjacent parts, confirmed their opinion of a collection of matter within; and according to this supposition, they attempted to obtain a cure by dilating the orifice, and endeavouring to make an incarnation from the bottom of the hollow. Being unacquainted both with the situation and the use of the nasal duct, they took no care to free it from the obstruction under which it laboured, but dressing
the

the fore like a common imposthumation, permitted it either to be filled up with a loose fungus, or to contract itself to a narrow fistulous orifice, which daily discharging a discoloured kind of fluid, and not healing by such means as they made use of, they concluded that the bone underneath was carious, made way down to it, either by removing the parts with a cutting instrument, or by destroying them with caustic and cautery, intending to procure an exfoliation, and thereby a firmer basis for the incarnation.

But since the use of the ductus nasalis has been known, since it has been discovered that an obstruction in this is the principal cause of the disorder, and that what was supposed to be the cavity of an abscess is really the sacculus lachrymalis, both the intention of cure, and the means, have been considerably altered.

Mr. Pott observes, that in the first and most simple state of the disease, viz. that of mere obstruction, without inflammation, much pains has been taken to restore the parts to their natural state, and use without making any wound or division. The introduction of a probe, the injection of a fluid, and a constant compression, made on the outside of the sacculus, in the cor-

ner

ner of the eye, are the principal means by which this has been attempted.

Some years ago M. Anel made a probe of so small a size as to be capable of passing from the eye-lid into the nose, being introduced at one of the puncta lachrymalia, and passing through the sacculus and duct. With this probe he proposed to break through any small obstruction which might be found in its passage.

He also invented a syringe, the pipe of which is small enough to enter one of the puncta, and by that means to furnish an opportunity of injecting a liquor into the sacculus and duct.

By those two instruments he alledged that he was able to cure the disease when it consisted merely in obstruction, and the discharge was not much discoloured.

Mr. Pott observes that the first of those, viz. the passage of a small probe through the puncta, has a plausible appearance, but will, upon trial, be found very unequal to the task assigned. The very small size of it, its necessary flexibility, and the very little resistance it is capable of making, are manifest deficiencies in the instrument. The acute sensation in the lining of the sac and duct, and its diseased state, are also great objections to the use of the probe, supposing
that

that it was capable of answering any valuable end, which in Mr. Pott's opinion it is not.

Our author admits that the passing a fine probe from one of the puncta lachrymalia into the nose, is very practicable; but he observes, that the pain it gives, and the inflammation it often excites, are much greater than any benefit which does or can arise from it.

It is said that the principal use of this probe is to clear the little ducts leading from the puncta into the sacculus, and the obstruction of those ducts is often mentioned as a part of this disease. By this we might be led to suppose that it was a circumstance which frequently occurred. But Mr. Pott observes, that it is seldom, if ever, met with; and when it does happen, can never produce the disease in question; the principal characteristic of which is a discharge into the inner corner of the eye, upon pressure made on the angle. This discharge is made from the sacculus, through the puncta, and proves that the latter are open. The passing a probe, therefore, through the puncta, seems to be perfectly unnecessary, since a stoppage of them would never give rise to that disease, which consists in an obstruction to the passage of any thing from the sac into the nose, and not from the eye into the sac.

Mr.

Mr. Pott observes that the syringe, if used judiciously while the disease is recent, the sac very little dilated, and the mucus perfectly clear, will sometimes be found serviceable. He has used it where he thinks it has been much so. He has by means of it injected a fluid through the sacculus into the nose, and in two or three instances has effected cures by it. But he has also often used it ineffectually. It gives no pain, and a few trials render the use of it very little troublesome.

Fabricius ab Aquapendente invented an instrument, so contrived as by means of a screw to make a pressure externally on the lachrymal bag; from the use of which, he says, his patients received much benefit. This instrument has been considerably improved by late practitioners, and is still recommended as very useful.

All the good that can be expected from compress and bandage, Mr. Pott observes, this screw is capable of procuring; but it is also subject to all the same inconveniencies, arising from the impossibility of determining exactly the due degree of pressure. For if it be so great as to bring the sides of the upper part of the sac into contact, all communication between it and the puncta will be thereby stopt. If it be but slight, the accumulation will not be prevented; nor does it in either
 case

case contribute to the removal of the obstruction in the nasal duct, the primary and original cause of the disease.

Mr. Pott observes, that if the curative intention was to procure an union of the sides of the sacculus, as in the case of parts separated from each other by the formation of matter or sloughs, and the pressure could be made uniformly and constantly, possibly it might be so managed as to answer a valuable purpose; but as that is not the intention, the pressure, whether made by an instrument, or by a common roller and compress, contributes little or nothing towards a cure, nor did he ever see one effected by it, although he has several times tried both.

That some slight obstructions of the nasal duct have gone off while the compression has been used, Mr. Pott does not deny, but he questions much the share that the latter had in removing them; having seen more than one instance of a cure being obtained by the use of a proper regimen and medicines in slight and recent cases, where nothing was used externally but a vitriolic collyrium; and having been always disappointed in his attempts by mere bandage of any kind.

Besides these means of attempting a cure without incision, the gentlemen of the French Academy have contrived some others, such as, the introduction

roduction of a probe into the lower part of the nasal duct within the nose, the injection of a fluid by the same orifice, the passing a seton from the punctum lachrymale superius through the sacculus and duct, and out at the nostril, there to remain till the cure is completed. For those purposes they have invented a number of probes, syringes, and other instruments, which, they tell us, have been very successfully used. From the experiments, however, which Mr. Pott has made respecting those processes, he suspends his assent to their general utility, or even to their frequent practicability.

Repeated trials upon dead subjects, says Mr. Pott will undoubtedly enable a man to pass the probe, or perhaps now and then the seton, but he will also often find it absolutely impracticable; and in the few instances in which he may chance to succeed as to this attempt, what, says our author, will in general be the consequence? Not what the writers on those subjects have taught him to believe, a cure, but a sense of pain, and degree of inflammation, which the patient before such attempts were made, was free from, an exasperation of the disease, and a loss of much time, as Mr. Pott has more than once experienced. To which consideration may be added, that infants and young children are very often afflicted with

this disorder, and that such processes as those are absolutely impracticable upon them.

Mr. Pott informs us, that he has used Anel's syringe successfully, and thinks it may now and then be very well worth trying, especially in recent cases, as it may always be used without giving any pain, or running the risque of exciting an inflammation; but he observes, at the same time, that if the bag is not much dilated, the mucus clear, the skin and cellular membrane uninflamed, and the adjacent parts soft and easy; if the patient will take care not to suffer too great an accumulation; will, by the frequent use of a vitriolic collyrium, keep the eye-lids clean and cool, and carefully avoid such things as irritate the membrana narium, or occasion a sudden flux of lymph from the lachrymal gland, the disease may for many years, nay often for life, be kept from becoming very troublesome, without any assistance from surgery.

But if the disease has advanced beyond the simple state above described, that is, when the contiguous parts are much, or constantly inflamed, or the skin covering the tumor is burst, something more is requisite for effecting a cure.

In this state, Mr. Pott observes, an opening in the upper part of the sacculus lachrymalis becomes, in general, absolutely necessary; and as

a wound made by a knife leaves a much less disagreeable scar than that which follows the bursting of the skin, one being a mere simple division, the other a loss of substance, it will always be found best to anticipate the accident of bursting, by making the opening as soon as the integuments are in such a state as to threaten that event.

Particular injunctions are given by chirurgical writers respecting the place and manner of making this incision. They have directed that it be made semi-lunar, with its concave part towards the eye; and that the point of the union of the lids should be exactly opposite to the centre of the incision. This lunated form was calculated to correspond with the course of the fibres of the orbicular muscle, upon a supposition that a transverse section of them would produce an inversion of the lower lid; an effect which, Mr. Pott remarks, never follows. All that the surgeon need observe, he says, is to take care to keep the knife at a proper distance from the juncture of the palpebra; to begin the incision a very little above a line drawn from that juncture towards the nose, and to continue it downward. Its form, he adds, may full as well be straight as any other; and the best instrument to make it with is a small crooked bistory.

If the sacculus be already burst, the place of opening is determined, and the orifice may be enlarged with a knife, or dilated. When the incision is made, the sacculus should be moderately distended, either with dry lint, or a bit of prepared sponge; by which means an opportunity will be gained in two or three days of knowing the state of the inside of the sac, and of the ductus nasalis. If the former be neither sloughy nor otherwise diseased, and the obstruction in the latter but slight, it sometimes happens that after a free discharge has been made for some days, and the inflammation occasioned by the first operation is gone off, the sac contracts itself, a superficial dressing, with moderate pressure, heals the fore, the lachrymal fluid resumes its wonted course, and the disease disappears.

Mr. Pott informs us, that of this he has seen more than one instance; and perhaps it would happen oftener, says he, if the very absurd manner in which this disorder is generally treated, after opening the bag, did not prevent it.

The same judicious author observes, that if this simple method does not succeed, or from the state of the parts seems unlikely to do so, another must be tried, which the opening already made will enable us to put in practice. The point to be aimed at is, if possible, to render the nasal duct pervious.

pervious to the lachrymal fluid; and we must endeavour to obtain this end by such means as give the least pain, excite the least inflammation, and leave the parts as near as possible in their natural state. The method of opening is to endeavour to dilate the passage from the sac to the nose, by some means which will gradually distend it without destroying its texture, in the same manner as the dilatation of the urethra ought to be effected in the case of strictures, by passing gently under it either a probe, a piece of cat-gut, or a bougie, so far as it will easily go, and repeating it occasionally, until it is got quite through.

Every man, says Mr. Pott, will determine for himself, by what means he will endeavour to accomplish this end; nor is it of very material consequence which he prefers, provided it be done gradually, and without giving pain. A proper dilatation of the upper part of the sacculus by dry lint, or a bit of prepared sponge, will be found useful previous to the attempt towards passing any thing into, or through the duct; and it will also be necessary that the surgeon have a just idea of the size and direction of it, both in a natural, and a diseased state. For, says Mr. Pott, whoever has formed a notion of the duct only from viewing its bony channel in a dry skull, will upon experiment find himself much

deceived with regard to its diameter in a living subject. The membrane which lines it is not extremely thin in a healthy state; and when it is inflamed or thickened by obstruction, the passage through the duct is thereby rendered very small, if it is not quite shut up.

Mr. Pott observes, that such of our ancestors as mistook this disease for an abscess, and found (as indeed must always be the case) extreme difficulty in filling it up with sound flesh, generally had recourse to escharotic medicines for the destruction of that fungus which seemed to impede the accomplishment of their purpose. By this treatment they irritated all the neighbouring parts, increased the inflammation, and were generally disappointed in the expectation of a cure at last. Medicines of the same kind were also used by those who supposed the disorder to be an encysted tumour, with intention of eradicating the cyst, which, by remaining behind they thought prevented a cure. Mr. Pott observes that these methods of practice were justifiable, supposing the idea they entertained of the disease had been well founded; but though their reasoning was right, their principles were wrong, and being but little acquainted with the structure and use of the parts, they mistook the nature of the distemper. But now, says Mr. Pott, that we are thoroughly acquainted-

quainted with both, this kind of practice ought certainly to cease, as the preservation of the facculus and duct, and not their destruction, are, or ought to be intended. All cathartic medicines must be prejudicial, at least while the intention is such; an intention, it is observed, which is always rational, and sometimes capable of being fulfilled.

Mr. Pott remarks, that notwithstanding the destruction of the bag is allowed to be wrong by most surgeons of the present time, yet there are many who, by their manner of dressing it, after it has been opened, do really, though not intentionally produce the same effect that our forefathers aimed at. It is still a custom with many, as soon as the bag is opened, to distend the cavity of it with a hard tent, or with dossils of lint charged with escharotic medicines, such as *mercurius precipitatus ruber*, &c. by which means the inflammation is increased, the skin and edges of the incision hardened, and the inside of the facculus put under the necessity of casting off a slough. This is one of several instances still remaining of our adhering to old methods of practice, after the principles on which such methods were originally founded have been admitted to be erroneous. For this manner of dressing the sore is in effect the same as the ancients made

use of, while they supposed the disease to be an abscess of the caruncle, and encysted tumour, or a callous ulcer with carious bone. It was by them intended very properly for the destruction of such callosity, to assist the exfoliation of the supposed caries, and to procure a firm basis to incarn upon.

On the contrary, says Mr. Pott, the point which ought first to be aimed at, immediately after having made an opening into the sac, is to endeavour to remove the obstruction of the natural passage thence into the nose, by the means already mentioned; an intention which this method of cramming in escharotic dressings must necessarily frustrate, must frequently render a simple case complex, and retard the cure which it was designed to expedite. A cure has indeed now and then been effected by this means; but this has happened so seldom, that it can hardly be admitted as an authority or vindication of so irrational an attempt.

Mr. Pott observes that the parts about the eye are most of them of very quick sensation, and easily irritated, and therefore that the dressings cannot be too soft and light. Suppuration is an act of nature, not of art; and is always best executed, when she is least disturbed. This is a general truth, and will hold good in all parts of
the

the body, even where suppuration may be most wanted; but in the present case, in which the lower part of the sac, and all the duct, are often in such state as not to require any suppuration at all, escharotic dressings of any kind, by producing inflammation both of the eye and caruncle, by rendering the edges of the fore hard, or sloughy, and by destroying the communication between the puncta lachrymalia and sacculus, must necessarily counteract the only proper intention of cure.

Mr. Pott would not be understood to mean that a mere superficial pledgit is all the dressing that is required. A moderate dilatation of the upper part of the sacculus is first absolutely necessary, in order to get easily at the duct below; but this should be effected without the use of corrosive applications of any kind, and is best accomplished by prepared sponge, which will distend to almost any degree, without being destroyed.

When a passage has been obtained, it should be carefully kept open, either by a piece of cat-gut, a small bougie, a leaden probe, or something of that sort; and when it is thoroughly established, the fore may be permitted to contract, until it becomes no more than what serves for the introduction of the bougie into the duct. In this
state

state Mr. Pott advises that it be kept open for some time, injecting now and then a little aqua calcis, softened with mel rosarum, from above into the nose; and when it appears that the passage is so free, and so well established, that there is strong probability of its preserving itself, the orifice in the angle of the eye, by being covered only with a superficial bit of plaster, or pledgit, will contract and close. If during its closing, moderate pressure be used on the sacculus, to prevent a fresh accumulation of mucus, it will assist the cure.

Whether the sacculus in a healthy and undilated state, is endued with any degree of contractile power, which it loses by being distended, or to what other cause it may be owing, Mr. Pott informs us, that he has more than once been foiled in his attempt towards curing the disease in this manner, by a fresh collection of mucus, notwithstanding the nasal duct has remained open, as appeared by the discharge made into the nose, upon pressure on the tumor, and the passage of an injection or small probe, after having again opened the sac. Some of those have, upon being again healed, remained good cures, and others not; great uncertainty attends those cases, and the event can never be known but by experiment. In all those cases, different circumstances

in the patient, or in the state of the diseased parts, must produce a variation in the necessary treatment, both in general and in particular. A bad habit will require the use of internal remedies: the combination of other diseases of the neighbouring parts will add to the difficulty; and even cases which seem most likely to succeed, do sometimes resist this, and indeed every other attempt.

From the necessity of keeping the eye bound while dressings are applied for the dilatation of the sacculus, an inflammation is frequently raised, which, added to the necessary discharge of serum, mucus, &c. is apt to heat and excoriate the contiguous parts. On this account, warm fomentations, cooling collyria, epulotic cerates, and renewing the dressings as often as shall be necessary, with whatever else can contribute towards keeping the skin clean and cool, must be found serviceable, as well as pleasant, and should never be neglected.

The last state which has been mentioned of this disorder, is that in which the natural passage from the sacculus to the nose is so diseased as to be quite obliterated, or in which the bones are sometimes found to be carious.

The methods hitherto described have all been calculated to preserve the natural passage, and to
derive

derive the lachrymal fluid again through it. For answering this purpose, they are sometimes successful; but when otherwise, the only surgical means left is to attempt the formation of an artificial one in its stead; which is effected by piercing through the *os unguis*, a very thin bone within the orbit of the eye, and to which the upper and hinder part of the *facculus lachrymalis* are firmly attached.

Mr. Pott observes that this operation was known to the ancients, and practised nearly in the same manner as at present, but with a different intention. They supposed this disease to be always attended with a degree of callosity, and often with caries, and that the most certain method to obtain a cure was to lay the bone bare. This they effected either by caustic or cautery, according to the inclination of the surgeon, or the desire of the patient. If caustic applications were used, they waited the separation of the eschar; and if they found or believed the bone to be altered, they applied to it an actual cautery. If the bone to which the iron was applied was the *os unguis*, it was too thin to bear much heat, or much pressure, and consequently was easily burnt or broke through, by which means an opening was made into the nose. Instead of the cautery,

a tere-

a terebra was sometimes used, and the same effect was produced by it.

By one or other of those methods, a passage being made from the sacculus lachrymalis into the nose, a cure was sometimes accidentally obtained. But the cautery was applied either to destroy the supposed callosity, or to desquamate a caries; and the terebra either for the same reason, or to make a passage for the discharge of matter, which lodged, and, as they thought, hindered the healing of the fore. Being unacquainted with the natural passage of the lachrymal fluid, Mr. Pott observes it would be absurd to suppose, that by means of this perforation they intended the opening of an artificial one. Callosity and caries were their two characteristics of this disease; the dissolution of one, and the exfoliation of the other, were all they had in view from the use of either caustic or cautery; and the perforation of the os unguis was either accidental, or made merely for the discharge of matter.

Mr. Pott observes that the intention of modern practitioners in making this perforation, is different from that of our ancestors, but is more rational, and founded upon the nature and use of the parts concerned in the disease. It is merely to form and maintain an artificial passage from the lachrymal bag into the nose, when the natural

natural one can no longer be useful. But though they are perfectly agreed in their intention, they are not so with regard to the instrument they use; some still continuing the actual cautery, and some using different instruments. Those who are advocates for the cautery, and prefer it to every other instrument, have endeavoured to obviate its inconveniencies. They have directed that the canula through which it passes, be made of a conical form, and so large at its lower end, as that they shall not touch each other. They have ordered this canula to be wrapped round with wet rag, at the time of using it: they have placed a check upon the top of the iron to prevent its point from going too far, and have been particular in directing us to withdraw it as soon as it is got through. But Mr. Pott remarks, that notwithstanding these and every other caution, the cautery gives great pain at the time of using, lengthens the attendance, and most commonly produces unnecessary deformity, even in the hands of the most dextrous, not to mention the horror occasioned by thrusting a hot iron into the corner of the eye.

When great inconveniencies arise from the use of this instrument, even in the best hands, we may easily conceive what disadvantages must attend it in those of the unskilful; and therefore, Mr. Pott

Pott observes, the use of it ought to be discouraged. This inference will appear in a stronger light, if we take a view of the intention with which it has been used by those who have said the most in its favour, and who may be justly supposed to have best known how to manage it.

Mr. Pott observes, that the defence made against the heat of the iron by the wet rag, the disproportioned size, and the figure of the canula, very plainly shew that its effect is designed to be produced by the point only; and the check at the upper end as clearly shews, that the point is designed to pass no farther than just through the bone, while all the ill effects are occasioned by the upper part of the cautery on the eye-lids and angle of the eye. If, continues Mr. Pott, it is not designed to produce any effect on any of the parts through which it passes down to the bone, but merely to burn through that and the membrana narium, and thereby make an opening into the nose, he cannot see how it differs from any other perforator of equal size, except in the mischief it does to the parts above, to which it should do nothing.

It does indeed burn the bone and membrane, through which it pierces, and thereby prevents the orifice from closing again immediately; and
this

this is certainly the principal end of perforation, by whatever instrument it is performed ; but it is equally certain, that the same end is attainable by means less mischievous and less horrible.

The abovementioned author remarks, that our ancestors had a very plausible reason for using it. Their ideas of callosity and caries always accompanied this disease, and authorised them to make use of such applications as they judged most proper. But now, when we know that these are symptoms which very rarely occur, or even if they do, that they are removeable in a much easier manner, we are no longer justifiable in continuing an alarming and painful process, when we can obtain the same end by much gentler means. For whether the membrana narium be burnt through, or divided in any other manner, the opening, by whatever instrument, or in whatever way it may be made, must be maintained by the method of dressing it.

The late Mr. Cheselden was a warm patron for the cautery, took a great deal of pains to prevent it from doing mischief, and has said in its defence, that “ other methods of curing this disease may have been much recommended, though often unsuccessful ; but this, well performed, is infallible.” Respecting this assertion, Mr. Pott informs us, that he is sorry to be

be obliged to say, it is contradicted by manifest experience; that there have been many instances of perfect cures performed without the use of a cautery; and that some of those who have been cauterised by Mr. Cheselden himself, have been disappointed in the expectation of one; nor could the latter, with all the pains he took, prevent the effect of the heat of the iron, or leave his patient without a weeping eye.

The intention is merely to make an opening through the unguis and membrana narium into the cavity of the nose, and to treat the perforation in such a manner as that it shall most probably remain open, and give passage to the lachrymal fluid from the puncta, after the external sore is healed.

Mr. Pott observes, that the extreme thinness of the bone renders the passage of the instrument very easy, and if the breach which is made be of any tolerable size, he is inclined to think that it never is filled up again by bone, but that when it is closed, it is by the membrane. It is therefore, he remarks, the surgeon's business to make a pretty large opening in the bone, and to prevent its being closed again, by rendering the edges of the membrane on each side of it callous.

For making this perforation various instruments have been devised, viz. a large strong probe, an instrument like a common gimblet, a curved trocar, &c. each of which, if properly applied, will answer the purpose very well. The one necessary caution is, so to apply whatever instrument is used, that it may pierce through that part of the bone which lies immediately behind the sacculus lachrymalis, and not to push up too far into the nose, for fear of opening the os spongiosum behind.

Mr. Pott informs us, that he has always used the curved trocar without experiencing any inconvenience from it. In using it, the point should be turned obliquely downward, from the angle of the eye toward the inside of the nose. The accomplishment of the breach will be known by the discharge of blood from the nostril, and of air from the wound upon blowing the nose. He observes that the most precise direction in this part of the operation will be of but little use to those who have no idea of the natural structure and disposition of the parts concerned; but who ever is at all acquainted with the matter, or will attend to the situation and connexion of the os unguis, knows that this bone is divided into two parts by a perpendicular ridge; that the lachrymal sac is connected to all that part which

is

is anterior to this ridge; and that the posterior part of the bone contributes to form the orbit of the eye, and has little or no connexion with the lachrymal sac. The trocar, therefore, must be applied to that part of the bone which is anterior to the ridge, and consequently behind the lachrymal bag. By the passage of the instrument, all this part of the bone will probably be broken, but thence no mischief will ensue.

By an attention to the natural situation of those parts, the practitioner will also find, that if the point of his instrument be passed in a transverse direction with regard to the nose, the os spongiosum superius will be unnecessarily wounded or broken; and if it goes in too perpendicular a direction, it may get into the channel of the natural duct, and its point will be stopped by bearing against that part of the maxilla superior which contributes to the formation of that channel.

It has been objected to the trocar, that it may break the os unguis at some distance from the place where its point is fixed. To this, Mr. Pott answers, that he has performed the operation a great number of times, and has never yet seen any inconvenience arise from it. A total removal of a small piece of the bone, he observes, would be a thing rather to be wished than a-

voided ; because, if we may reason from analogy, it seems to be necessary towards preserving a passage. For we very well know, in a caries of the bones forming the roof of the mouth, that they are sometimes bare for a large space, and by casting off leave a considerable aperture into the nose. Yet in many cases, when the virus is removed, and the habit recruited, that opening will so contract as not to suffer a small quill to pass, where a finger might before have been introduced, nay often will quite close. Therefore, though the opening made in the os unguis may in spite of all endeavours be again closed up, yet a free breach in it seems to be the most likely means for preventing such an effect. Upon this principle, Mr. Pott has always turned the perforator round very freely, whenever he has used it ; has never seen any mischief from such practice, and attributes the success he has had with it, in some measure to this method of using it.

As soon as the perforation is made, a tent of lint should be introduced, of such size as to fill the aperture, and so long as to pass through it into the cavity of the nose. This should be permitted to remain two, three, or four days, till the suppuration of the parts renders its extraction easy ; and a fresh one should afterwards be
passed

passed every day, until the clean granulating appearance of the sore makes it probable that the edges of the divided membrane are in the same state. The business now is to prevent the incarcination from closing the orifice; for which purpose the end of the tent may be moistened with *spiritus vitrioli tenuis*; or a piece of lunar caustic so included in a quill, as to leave little more than the extremity naked, may at each dressing, or every other, or every third, day be introduced; by which the granulation will be repressed, and the opening maintained. When this has been done for some little time, a piece of bougie of proper size, or a leaden canula, may be introduced instead of the tent; and leaving off all other dressing, the sore may be suffered to contract as much as the bougie will permit; which should be of such length, that one extremity of it may lie level with the skin in the corner of the eye, and the other be within the nose.

The longer time the patient can be prevailed upon to wear the bougie the more likely will be the continuance of the opening; and when it is withdrawn, the external orifice should be covered only by a superficial pledget, or plaster, and suffered to heal under moderate pressure.

Another method which has been much recommended by some French writers to prevent

the closing of the aperture in the os unguis, is to introduce into it a canula either of gold, silver, or lead; and to permit the sore to heal over it, suffering the canula to remain, or to come away by the nose.

Mr. Pott informs us, that, for his own part, he has never had occasion to try it; the cases of this kind which he has had under his direction, having generally succeeded under some of the methods already mentioned. But he repeats his remark, that there is no method of treating this disorder which is infallible, none that will absolutely and in all cases prevent a return, especially in scrophulous habits. Yet when a just distinction is made between those cases which are in their own nature incapable of cure, and those which by being improperly treated are not cured, he is inclined to believe, that the number of the former will be found much smaller than is generally imagined.

Of the P O L Y P U S of the N O S E.

THE polypus of the nose is a disease of the membrana pituitaria, and has different seats, origins, and attachments. It is, as Mr. Pott observes, a complaint which is always troublesome, frequently painful, and sometimes hazardous. The first of those circumstances is the necessary consequence of the situation of the distemper; the second arises from its peculiar nature in the individual; and the last, sometimes, from its particular nature, and sometimes from the manner in which it may have been treated.

The method recommended for curing this disorder, has been extirpation, either by ligature or extraction. The former of those was in use so early as the time of Hippocrates; but the difficulty of performing this operation has either appeared so great, or has been found so by experience, that the usual method of removing a polypus has been by extraction with a forceps.

The reason for preferring the ligature to the forceps is the probability of a hæmorrhage after extraction, which is described by all writers, and particularly Mr. Levret, as exceedingly dangerous, especially in those polypuses which hang

down in the throat ; but Mr. Sharp informs us, that he never once observed this consequence, either where he has performed the operation himself, or seen others perform it. He does not, however, deny the possibility, though he questions the frequency of it.

Mr. Pott observes, that from the accounts generally delivered of this complaint, those who have not had much opportunity of seeing it, are induced to believe, that, except in a few particular instances, where the distemper is evidently cancerous, all others are equally objects of surgical treatment ; and therefore, that if, in the first instance, they can lay hold of the polypus with the forceps, and in the second, can provide against the hæmorrhage, they have nothing else to do or to fear.

To himself, however, the matter appears very differently. He cannot help being of opinion, that there are many polypi, which, although they are neither scirrhus nor cancerous, are very unfit for any chirurgic treatment ; and this from several circumstances. These, he remarks, may forbid an attempt merely from the impossibility of its being successful ; or they may forbid it, because it is more likely to do harm than good ; more likely to exasperate the disease than to cure it.

As far as Mr. Pott has observed, the polypi which begin with, or are preceded by considerable or frequent pain in the forehead and upper part of the nose, and which, as soon as they can be seen, are either highly red, or of a dark purple colour ; they which from the time of their being noticed, have never been observed to fluctuate in their size, but have constantly rather increased ; they in which the common actions of coughing, sneezing, and blowing the nose, give pain, or produce a very disagreeable sensation in the nostril or forehead ; they which, when within reach are painful to the touch, or which, upon being slightly touched, are apt to bleed ; they which seem to be fixed and not moveable by the action of blowing the nose, or of deriving the air through the affected nostril only (where the polypus is only on one side ;) they which are incompressibly hard, and which, when pressed, occasion pain in the corner of the eye, and in the forehead, and which, if they shed any thing, shed blood ; they which, by adhesion, occupy a very considerable space, and seem to consist of a thickening, or of an enlargement of all the membrane covering the septum narium ; they which sometimes shed an ichorous, offensive, discoloured matter ; and they round the lower part of which, within the nose, a probe cannot easily
and

and freely be passed, and that to some height, ought not to be attempted, at least by the forceps, nor indeed by any other means with which we are acquainted ; and this for reasons obviously deducible from the nature and circumstances of the polypus. On the one hand, the very large extent and quantity of adhesion will render the extirpation impracticable, even if the diseased part could be comprehended within the forceps, which it very frequently cannot ; and on the other hand, the malignant nature of the distemper may render all partial removal, all unsuccessful attacks on it, and indeed any degree of irritation, productive of the most disagreeable consequences.

But the polypi which are of a palish or greyish light brown colour, or look like a membrane just becoming sloughy ; they which are seldom or never painful, nor become so upon being pressed ; they which have appeared to be at one time larger, at another less, as the air has happened to be moist or dry ; they which ascend and descend freely by the action of respiration through the nose ; they which the patient can make to descend by stopping the nostril which is free, or even most free, and then deriving the air through that possessed by the polypus ; they which when pressed give no pain, easily yield to

such pressure, become flat thereby, and distill a clear lymph; and they round the lower and visible part of which a probe can be easily passed, and that to some height, are fit for extraction; the polypus in those circumstances frequently coming away entire; or, if it should not, yet it is removable without pain, hæmorrhage, or hazard of any kind. The second of those circumstances Mr. Pott affirms he never yet met with when the disease was at all fit for the operation.

Mr. Pott observes, that of the benign kind of polypus, fit for extraction, there are two sorts, the principal difference between which consists in their origin and attachment: that which is most freely moveable within the nostril, upon forcible respiration; which has been found to be most liable to change of size, at different times and seasons; that which has increased the most in the same space of time; that which seems most limpid, and the most freely yields lymph upon pressure, has its origin most commonly by a stalk, or kind of peduncle, which is very small, compared to the size of the polypus: while that, which although plainly moveable, is still considerably less so than the other; which has been less liable to alteration from air and seasons; and has been rather slow of arriving at a very trouble-

troublesome size, is most frequently an elongation of the membrane covering one of the ossa spongiosa. They are both capable of being extracted, and that with no kind of hazard, with very little pain, and hardly any hæmorrhage; but the former requires the least force, and most frequently comes away entire; while the latter often breaks, comes away piece-meal, and stands in need of the repeated use of the forceps.

From these observations, Mr. Pott draws the following practical inferences:

First, that the polypi, under the first description, very rarely, if ever, admit an attempt towards extraction; and that not merely from the improbability of its being attended with success, but because such attempt may prove the cause of very disagreeable consequences.

Secondly, that in those which do admit an operation, or the use of the forceps, the degree of success will depend principally upon two circumstances, viz. the benignity of the disease, and the degree and quantity of attachment. For, though the nature of the complaint may be perfectly benign, yet it may happen, that the cure may not be attainable, and that merely from the degree and kind of attachment.

Thirdly, that the hæmorrhage so much talked of, so solicitously guarded against by writers, and
so

so much dreaded by young practitioners, will not often, if ever, be met with, in such cases as properly admit the operation.

The polypus is a disease which is accounted extremely difficult entirely to eradicate, and most liable to reproduction. Mr. Pott however remarks, that this is not so often the case as it is supposed to be. It not unfrequently happens, that there are, at the same time, two, three, or more different polypi, each of which is perfectly distinct from the others, and has a separable distinct attachment. When this is the case, the lowest or most anterior, having the open nostril before it, easily makes its way down, uncompressed; while the other, or others, are not only kept up, and out of sight, but are also considerably compressed.

When the one which was within sight and reach, has been removed, the next falls downward, and soon becomes visible; if it was large and lax, and merely kept up by what lay before it, it is often to be seen immediately; but if it is small, it may lie out of sight, and can only be suspected by the passage of air through the nostril not being free, although the polypus which was removed, came away perfect and entire; and when it does appear, it passes for a reproduction from the old stem, though it
be

be really another and perfectly distinct polypus ; of which the entire state of the investing membrane, and the separation of the polypus from its single point of attachment, will, upon careful examination, appear irrefragable proofs.

In respect of the methods of destroying a polypus by escharotics, and a kind of medicated setons, Mr. Pott has never found them successful. On the contrary, he informs us, that all he has done of this kind, or has seen done by others, has served more and more to deter him from such practice. When the polypus is loose, and fairly circumstanced for extraction, he affirms that it is not only the best method of cure, but is always advisable, and very frequently successful. But when from immobility, largeness of attachment, malignity of nature, or from any other cause, it becomes unfit for the use of the forceps, it is always, as far as he has been able to observe, still more unfit for caustic. He adds, that he does not remember a single case, which has been so circumstanced as to render the use of the forceps absolutely unadvisable, where the application of escharotics would not have been much more so. Mr. Pott observes, that the structure and irritability of parts within the nose, and the impossibility of confining the application, or limiting the effects of caustic medicines in such a part, in
what-

whatever manner or form applied, are palpable objections a priori; and the very disagreeable consequences which have been often found to follow from the inflammation and irritation of what it was possible totally to destroy, have been too serious to be slighted.

Instead of falling down the nostril, the polypus sometimes makes its appearance backward in the fauces behind the uvula; in which case the general method is, to extract it by introducing the instrument into the mouth, and not through the nose. Mr. Pott observes that this, though sometimes practicable, is much more easily described than executed; and in some people will be found absolutely impracticable. The objection arises from the great difficulty of keeping the tongue down in some, and in others from their incapability of permitting any thing to touch the root of that part, or any part of the fauces, without immediately producing a spasm. To which may be added, that in some cases, the polypus is so expanded as almost to conceal the uvula, which is therefore liable to be laid hold of by the instrument, to the no small detriment of the patient.

Mr. Pott farther observes, that however large, pendulous, or expanded such polypus may be,
its

its attachment always is, and must be, within the cavity of the nose, and therefore always within the reach of a pair of forceps introduced that way, especially if the instrument be somewhat curved. This, when the excrescence appears behind the uvula, will have one advantage superior to what it has when the polypus appears in the nose; which is, that it will be applied much nearer to the point of attachment, and therefore most likely to extirpate it perfectly.

Mr. Pott cautions the young practitioner to be exceedingly careful in examining into all the circumstances previous to undertaking a cure, lest he should find, too late, that he has gone too far to recede. For want of such caution he has seen hæmorrhages which have been frightful, and inflammations which have proved fatal. He has seen a case, where an untoward looking polypus, and which ought not to have been meddled with, has been so attached to a distempered septum nasi, that the latter has come away with it. He has seen the same thing happen with regard to almost the whole of the ossa palati; and he has more than once known a polypose thickening of the membrane covering the ossa spongiosa, and septum nasi, which, in all probability, would have remained quiet a great length of time, so irritated

ed by rough treatment, and successless attempts, as to render the remainder of the patient's life truly miserable to himself, and offensive to others.

Of LITHOTOMY.

VARIOUS methods have been proposed, in different ages, for performing this operation. The most ancient is that described by Celsus, who directs an incision to be made in *perinæo* immediately upon the stone. This method seems to have consisted in a kind of imperfect crucial incision.

The method next invented was that of Johannes de Romanis, in contradistinction to the former. It was called *Apparatus Minor*, and in it a greater number of instruments was employed.

The third was the method contrived by Petrus Francus, who finding a stone too large to be taken away through an opening in *perinæo*, boldly made an incision through the integuments and muscles, above the *ossa pubis*, into the bladder. This method has since been prac-

tified by some others, and is distinguished by the name of *Sectio Hypogastrica*, vel *Apparatus Altus*; the High Operation.

The fourth, called the *lateral operation*, owes its origin to Frere Jacques, but has since been improved by surgeons of greater eminence. It consists in using the catheter as a guide to conduct the incision.

The new method, or *apparatus magnus*, seems to be projected merely from the observation made of the great dilatability of the *cervix vesicæ*, and parts adjacent, when the stone is extracted from women. Therefore, as by cutting under the scrotum, close to the *raphe* on the left side, *in perinæo*, through the integuments and muscles, as low down as the upper part of the anus, then carrying the knife deeper to divide the urethra, the parts thus divided are brought nearly into the state of the urethra in women, those who perform by this method must depend upon the dilatation of the parts for the passage of the stone.

The method generally practised in England, at present, is the lateral operation. But Mr. Bromfield observes, that he has seen several perform it with so little deviation from that described by Marianus, that the advantage, if any, could scarcely be discovered by the spectators; as
the

the incision of the integuments was only carried a little lower by the side of the anus, and consequently a little more obliquely from the *raphe*. Hence, as the muscles and ligamentary fibres were, for the most part, undivided by the knife, the resistance to the stone was full as great in the extraction, as from the wound made for the *great apparatus*.

Le Dran has criticised on the manner of performing this operation by most of his predecessors, but has fallen insensibly into almost the same error he describes. He began his incision of the urethra where he felt the groove of the staff plainest, into which he plunged his knife, continuing its course downwards, till he had divided the bulb of the urethra. He then makes use of his new knife to cut, not only through the prostate gland, but to open the orifice of the bladder. This practice is censured by Mr. Bromfield, as it wounds the membranous part of that vessel, which he thinks ought never to be hazarded but under the most urgent circumstances.

Mr. Bromfield acknowledges that he is at a loss to account for Le Dran's dividing the bulb of the urethra, unless he meant to improve on Marianus's method; for had he made the wound of the integuments an inch and half below the

curvature of the staff in the *perinæum*, it must be nearly in the same direction as that which is usually made in the lateral operation; and, if so, he might easily discover the membranous part of the urethra. Consequently, the wound being made in that part of the canal, every advantage he proposes by dividing the prostate and neck of the bladder, with his new-invented knife, might be effected, though the bulb and other parts of the urethra were not cut through; which is not only unnecessary, but must afterwards prove prejudicial, by narrowing the canal of the urethra by the cicatrix, and will also be more likely to make the wound become fistulous.

However surgeons may agree in the general method of performing lithotomy, we rarely find two of them operate exactly in the same manner, or employ the very same kind of instruments. Mr. Bromfield describes the manner in which he has performed it for many years, and where he deviates from others he assigns his reasons for such conduct.

When it is determined that the operation shall be performed, the manner of preparing the patient depends on a variety of circumstances. If he be plethoric, a few ounces of blood must be taken away; and at proper distances of time,
the

the bowels must be emptied. The patient's diet should be chiefly milk and vegetables, or other light food; which regimen should be observed for some days before the operation. The opening medicines should be principally manna, or such other lenients. If the pain should be violent, though the patient be not plethoric, bleeding becomes sometimes also necessary; but opium must be employed to abate the excess of pain. It may however be advisable first to try the effect of keeping the patient on the bed with his hips raised, in order, if possible, to roll the stone from the neck of the bladder. The person should on no account be permitted to sit up, or use motion, during the preparation for lithotomy.

Mr. Bromfield having frequently remarked, that on a *diaphoresis* succeeding operations in general, the pain abated, and other disagreeable symptoms went off, he was induced to make use of the warm bath at proper distances of time, according to the strength of the patients, as a part of the preparatory plan for this operation; and he informs us that it always succeeded to his utmost expectations. For when the skin had been well cleaned and softened by the warm water, an anodyne seldom failed to produce a gentle diaphoresis after the operation, and generally

prevented the usual symptomatic fever consequent to operations.

If the patient is an adult, the *perinæum* should be shaved, and well cleaned. An hour or two before the operation, a clyster should be given to empty the rectum; and a few minutes before the patient is to be cut, he should make as much water as he can.

The patient being laid on a table covered with blankets, pillows, &c. and properly secured by ligatures and assistants, Mr. Bromfield passes the staff into the bladder, inclining the handle towards the abdomen, and obliquely to the right groin, so as to feel the groove of the staff in the *perinæum* on the left side of the *raphe*, which will be in the membranous part of the urethra. He then fixes it, and delivers it to his assistant, desiring him to press it gently, in order to advance the *sulcus* of the staff in the direction in which he had received it. Another assistant supports the scrotum. Mr. Bromfield then seats himself on a chair of a convenient height, and begins the incision of the integuments about half an inch below the commissure of the *ossa pubis* on the left side of the *raphe*; pursuing it with a quick stroke, obliquely outwards and downwards, between the anus and obtuse process of the *ischium*, and ending somewhat lower than the basis of the process. When the integuments are thus divided, he introduces the
fore

fore and middle fingers of his left hand. With the former he presses down the rectum, and with the latter keeps back the lip of the wound next the *raphe*. He then makes a second incision, almost in the same direction with the first, but rather nearer to the *raphe* and anus; sufficiently deep to divide the *transversalis penis*, and as much of the *levator ani* and ligamentous membrane as will make the prostate gland perceptible by his finger. He next, with the fore-finger of his left-hand, feels for the *fulcus* of the staff, which serves as a conductor to his knife for opening the membranous part of the urethra, and afterwards for dividing part of the prostate. The rectum is likewise by his fingers kept out of the way of the knife in the next part of the operation.

Hitherto he holds the blade of his knife like a pen, between the fore-finger and thumb, and resting on the middle finger of his right-hand, with the back of the blade uppermost; but now he takes it between the fore-finger and thumb of his right-hand, with the handle towards the palm on the inside; the back of the blade facing the inside of the index of the right-hand. He then turns downwards the back of the hand that holds the knife, which he conveys to the membranous part of the urethra, by gliding the under fingers of his right-

hand on the index of his left, which serves as a conductor of the knife to the gland. As soon as he perceives the gland, he feels for the groove of the staff with the index of his left hand, with which he conveys the convex edge of the knife into the membranous part of the urethra, as much laterally as is possible, and as nigh to the prostate. When he is clearly in the *fulcus* of the staff, he turns the back of his knife as much downwards as he can, to avoid wounding the rectum, as he then pushes the blade of the knife along the groove of the staff into the body of the gland, sliding the knife on the convexity of its edge, till it is divided near half the length of that gland; and if he is desirous of cutting a little more of it, he inclines the handle of his knife a little downwards, and towards the left *ischium*. The point of the knife will then drop into the groove of the staff, and, by drawing the knife in this situation towards him, he makes good the wound of the prostate, so as that near two-thirds of it may be divided in the operation. This last stroke of his knife is what is generally called, "Cutting from within outwards." He then introduces the beak of the common gorgereet into the groove of the staff, pressing it on, till it gets into the bladder, which is soon discovered by the flux of the urine. He
orders

orders his assistant to withdraw the sound, and then turns the convex part of the gorgeret towards the wound made in the prostate, and glides the fore-finger of his left-hand in the concave part of the gorgeret, till it enters the bladder. By this means he easily and gradually dilates the neck of the bladder, which being done sufficiently, he withdraws his finger, and introduces the forceps. If he does not readily feel the stone with his forceps *skut*, he gives a gentle stroke with them on the part of the bladder, near its neck, that is in contact with the rectum; by which means the stone will often drop down: if not, he rests one cheek of the forceps on the part to which he had before given the stroke, and by raising the other, opens the forceps. The inferior blade then becomes the axis, on which he turns the upper branch, first to one side, and then the other; by which means he can generally lay hold of the stone. When he attempts to extract it, he does it very gently, till he finds resistance from the adjacent parts. He then endeavours to prevent the forceps from pressing too much on the stone, by placing the thumb of his left-hand as near the joint of the forceps as he can, which, unless the stone be very soft, will prevent its breaking. If any vessel of consequence should be wounded, he takes it up by the needle and ligature,

or *tenaculum*; if small, he only applies a little dry lint to the mouth of the bleeding vessel.

In case the bladder has not been duly emptied before the operation, great care should be taken in extracting the stone, especially if it be small; for there not being time for the bladder to contract itself duly, it naturally will fall into wrinkles, and these will be liable to be laid on together with the stone; an accident which might prove fatal. If the stone is very large, Mr. Bromfield makes use of a screw he has contrived, which may be passed through a hole in one of the branches of the forceps, in which is a female screw. By turning the male screw, you may determine to the greatest exactness the degree of pressure proper to secure the stone in the forceps.

Though Mr. Bromfield has given this rule to prevent the breaking of a stone, yet he thinks the hazard is greater, in respect of the patient's life, where the stone is large and hard, and the incision small, if it should not break, than if it should, by the resistance of parts undivided. But still in this case there is danger from some fragments remaining behind, as well as from the forceps being so frequently introduced as may be necessary to their extraction. But when the stone is very large, the best way will be, to bring it forward with the forceps, and then secure them

by the screw from making too great compression. You may then, continues Mr. Bromfield, make your incision on the stone laterally, through the prostate gland; which is certainly preferable to risking the laceration and contusion of the parts, by extracting so large a body through an opening naturally so small. He highly disapproves of turning the stone from one side to the other when in the forceps, by way of dilating the neck of the bladder; as the points of the stone, particularly if it should prove of the mulberry form, will probably lacerate the parts, occasion large sloughs, and frequently cause a mortification.

Should any small branches of the *pudica interna* be wounded in the operation, in case a large stone has been extracted, Mr. Bromfield observes that the bleeding will rather be of service than prejudicial; and he should rather encourage it by fomenting the wound and parts adjacent with some emollient *fotus*, in which there is a third or fourth part of vinegar. On the surface of the wound is to be laid a pledget of soft digestive, which should be frequently renewed; for the dressing being pressed down deep in the wound, with a view to obtain granulations from the bottom, is likely to make it fistulous, which seldom happens by the superficial method of dressing.

Excoriations

Excoriations of the buttocks may be prevented by placing under them a sheet several times doubled, so as to be in breadth about eighteen or twenty inches. It must all be rolled up, except as much as is necessary to be laid under the patient. At first the remainder of the roll is put by his side, which unrolls as the nurse draws the wet part from under him. By this method he is almost constantly kept dry. Mr. Bromfield generally keeps the patient on a low diet for a week or ten days, as occasion may require.

To obtain the first stool, a clyster for the most part is necessary, which our author greatly prefers to purging medicines given by the mouth, as the latter frequently occasion more stools than one would wish. After the urine had passed a day or two by the usual channel, he thinks he has sometimes gained time, by applying to the lips of the wound, compresses, and slips of plaster, assisted by the T bandage.

Mr. Bromfield observes that many who espouse the lateral operation, conclude that the gland should be wounded laterally and horizontally, and for this purpose have invented various instruments to cut it through its whole length, to facilitate the extraction of a great stone. The prostate gland, he believes, is seldom entirely divided in the present method of performing the
 2 operation,

operation, and he thinks never horizontally laterally, as is supposed. This is obvious from the situation of the groove of the staff, which must cause the opening to be in the under part of the gland, a little to the left side.

When the common dissecting knife only is employed, some, as soon as they have made an opening into the urethra, in that part where the groove of the staff can be felt most sensibly, in order to avoid wounding the rectum, divide the gland obliquely upwards and outwards. Mr. Bromfield, from what he has seen of this method of operating, is convinced there is not any advantage in it, but, on the contrary, that it is rather prejudicial where the stone is large. For the resistance of the gland being removed in the upper part by the incision, and the ligamentous and muscular parts remaining undivided below, the stone is thrown up towards the symphysis of the bones of the pubes, which is the smallest part of the angle of the pelvis, through which the stone is to pass. The great force requisite to extract the stone, under these circumstances, frequently occasions it to be broken, and the neighbouring parts very much contused and lacerated; which could not be the case, were all the resistance taken away below, where the distance between the ischia is greatest.

Mr.

Mr. Bromfield informs us, that though almost all operators would wish (by what he understands) to divide the prostate gland throughout its whole length, it is what he would always choose to avoid. About two thirds of it nearest to the membranous part of the urethra, he is convinced will be sufficient, and attended with more advantage than the cutting it entirely through; as the only obstacle a stone meets with is in that part of the gland; for the neck of the bladder beyond will dilate sufficiently in most cases without laceration; and as the wounded parts will sooner heal by the muscular fibres, which act as a sphincter, recovering their tone, than they would do if the urine were constantly running through them. By this method of operating, and proper treatment of the wound afterwards, he does not recollect a single instance of a fistula remaining.

Mr. Bromfield observes, that the giving a clyster before the operation, to empty the rectum, is almost universally practised, and beyond all dispute makes the hazard of wounding that gut much less; but surgeons, he adds, have not paid great attention to what he is very solicitous about, and that is to have the patient discharge all the urine possible, a little before the operation is performed. Where this has been neglected,

lected, the urine, by which the bladder was filled, being suddenly discharged by the introduction of the gorgeret, there will be danger that the bladder, as it collapses without contracting, may fall between the cheeks of the forceps and the stone, and suffer considerably in the extraction of the latter, even with the greatest care. The stone is likewise, in general, with more difficulty laid hold of, and sometimes it is suspended by a fold of the bladder in its collapsed state.

This experienced author also observes, that very few surgeons carry the incision of the integuments so low down on the buttocks as he has directed: but he has often seen the stone kept back merely by the integuments; and the carrying the incision lower than usual is attended with the farther advantage, of affording a free depending exit for the urine, till the neck of the bladder become again fit for performing its office. This kind of incision will also prevent abscesses, which are not uncommon where the urine is detained, and insinuates into the cellular substance in the pelvis.

Another caution is necessary in respect to the incision of the integuments. For when it is begun too high, the consequence has been, an inflation of the cellular membrane of the scrotum; and sometimes the blood from a wounded vessel
has

has insinuated itself into the cells of that membrane ; nor is it uncommon in such cases for the scrotum to sphacelate. When this happens, it must be treated with fomentations, cataplasms, the bark, cordials, &c. as in similar cases of other parts.

These, Mr. Bromfield adds, are often the ill effects of too small an opening ; but no bad consequence can attend a large one, if not carried too deep into the pelvis. He has seen this first incision of the integuments made sufficiently large, but the *transversalis penis*, *prostatici inferiores*, and part of the *levator ani* left undivided ; by which means the resistance from them throws the stone up towards the symphysis of the *ossa pubis*, and makes the extraction even of a small stone difficult. Another disadvantage will arise, when these muscles, and the ligamentous fibres are not divided, which is the impracticability of wounding the prostate gland properly.

Such are Mr. Bromfield's directions and remarks respecting the operation of lithotomy on the male sex ; but he has no less improved this part of surgery, by the method he recommends for performing it on women, to which we now proceed.

Of the MANNER of PERFORMING the
OPERATION of LITHOTOMY on
WOMEN.

THE necessity of performing this operation is less frequent in women than in men, because in the former the urethra is so short and dilatable, that stones, when small, pass readily, without much straining. The methods proposed are either by the dilatation or the division of the urethra. Of those who recommend the former method, some have endeavoured to effect it by means of a sponge tent, dried gentian root, or by an instrument called *dilatator*, or *speculum vesicæ*. Others, when the gorgeret is in the bladder, have introduced their fore-finger, which doubtless is the safer instrument of the two.

After Mr. Bromfield had endeavoured to dilate the urethra of a girl by repeatedly introducing pieces of prepared sponge, which he found had very much excoriated the urethra, and so much injured it near its external aperture, that the introduction of the gorgeret was effected with great pain, he recollected how much the os tincæ becomes dilated at the time of birth, by the gradual pressure to which it is exposed. This reflection determined him to make trial of some-

thing which might open the neck of the bladder in the same manner as the membranes and waters open the neck of the womb in parturition. He soon had an opportunity of carrying the project into effect. By means of a strait blunt director, he introduced into the bladder the closed extremity of *appendicula intestini cæci* of a small animal; and leaving out, at a proper length, the open end, he filled it, by means of a syringe, with warm water, which he prevented by a ligature from escaping. He then made a twist or two of that part of the appendicula which was left out, that the contained water might, by being pressed upon, distend the close end which was in the bladder. The nurse had direction to draw it forward from time to time, and occasionally give a fresh twist, so as to fill the end contained in the bladder more and more as the *cervix vesicæ* opened. By this process, continued for some time, he was in hopes the neck of the bladder would be gradually and sufficiently dilated, so as to admit the forceps with ease, and consequently lessen the force usually required in the extraction of the stone. When every thing was ready in the operation room, he gave direction to the nurse, to let the girl empty her bladder; and he was soon afterwards informed, that there was not any necessity for performing the intended operation;

operation; the girl having discharged the stone, by straining to get rid of her urine. She was thus entirely freed from her complaint; the neck of the bladder and its sphincter soon recovered their power; and by fomenting the parts with warm milk and camphorated spirit, there did not follow any great degree of inflammation.

The case above recited is sufficient to induce every practitioner to give this method the preference, either to sponge, or the dried gentian root, where dilatation is intended, as preparatory to the extraction of a stone from women.

Those who prefer incision, as less troublesome to the patient, as well as to the operator, may do it by introducing a strait director by the urethra into the bladder, and then turning the *sulcus* in such a manner that the double gorgeret, when passed, may make the wound of the neck of the bladder on the left side, slanting obliquely downwards. By this method the vagina and rectum are secure from danger, when the knife fixed in the side of the gorgeret is pressed forward to divide the neck of the bladder two-thirds of its length. This incision always proves sufficient; as that part of the cervix which remains undivided is capable of being dilated to such a degree as is necessary for the extraction of very

large stones. It will likewise recover itself almost as soon as the forceps is withdrawn; by which the cure will be greatly facilitated, even though the cervix should be nearly divided in the operation. This method, Mr. Bromfield informs us, he has pursued with invariable success.

Frere Jacques, Rau, Le Dran, and Heister, seem to prefer the lateral incision in women, as in men, where the stone is large; but the two last mentioned acknowledge that the rectum and vagina are very liable to be wounded in the operation, especially in women who have borne children. Heister soon after alters his opinion in respect of the lateral operation where the stone is large, and joins Douglas and Morand, in preferring the incision above the os pubis, as the *usual* inconvenience of an incontinence of urine from the lacerating or overstretching of the sphincter vesicæ will thereby be prevented. Mr. Bromfield remarks, however, that he never knew this misfortune consequent to the operation, when performed by the double gorgeret. For by this instrument the parts are gradually dilated, and then incised in the most advantageous part for the passage of the stone; as in extracting it the vagina and rectum are both depressed by the inferior gorgeret, so as not to be wounded by the knife, either on introducing the instrument, when
the

the two gorgerets are united, or when the upper part, to which the blade of the knife is affixed, is withdrawn.

The method of treatment after the operation should be the same as in men. It being evident, as Mr. Bromfield observes, that spasm is the principal cause of the usual symptoms attending operations in general, opiates that produce a moisture on the skin, will sooner effectually remove the symptomatic fever, than evacuations, unless the pulse should be very full and strong. An oily draught with tinctur. Thebaic. and vinum antimoniale is what generally has answered extremely well, and should be repeated as occasion may require, to support a gentle diaphoresis.

Of the D I S E A S E S of the U R E T H R A.

SINCE the method was introduced of curing the venereal disease by injections, disorders of the urethra have become more frequent; but the mode of treating them is now more firmly established, and this constitutes a principal part of the modern improvements in surgery.

The urine may be totally suppressed, or prevented from flowing with its usual stream through

the urethra, from an inflammation of the neck of the bladder, or from some preceding injury done to the urinary canal, either by the lodging or passing small stones, or gravel, or from a venereal taint producing ulcers, which, from whatever cause they may arise, will frequently become ill-conditioned, with callous edges, chiefly from the salts of the urine adhering to them. An improper use of astringent injections are likely to pucker up the inner membrane of the urethra, and produce a stricture; while oleaginous, or balsamic injections of the terebinthinate kind often occasion funguses, or carnosities. In other instances, where the acrimony of the humour is extremely great, the whole spongy substance of the urethra will become inflated, or an abscess be formed in the passage, with, or without a fistula in the perinæum, scrotum, or groin. These are no uncommon attendants on strictures in the urethra. An enlargement, with induration of the verumontanum, or some of the urethral glands, frequently also become obstructions to the free exit of the urine.

A virulent gonorrhœa will often prove very obstinate, even under the management of the most skilful surgeon. For when the urethra is affected by a venereal virus, in a person
of

of a scorbutic habit of body, the scorbutic humour frequently fixes on the injured part; and this species of acrimony is increased by mercurial medicines, which are necessary for curing the other taint. The length of time that ulcers in any part are kept open, gives them a tendency to become callous at their edges; particularly when the matter discharged is accompanied with any degree of virulence; and this accident is almost unavoidable, when the salts of the urine are constantly sticking to the excoriated parts, thereby increasing the inflammation, and adding to the callosity of the lips of the little ulcers in the urethra. From the same cause, strictures, caruncles, polypuses or fungi, as well as callous edged ulcers, may be produced, though injections have never been thrown up the urethra.

Incipient obstructions of the urethra may be known from the stream of the urine, which either goes off obliquely, and twisted spirally, or is, like a cork-screw divided. It gradually becomes smaller and smaller, till its diameter does not exceed that of a small thread, and often can be discharged only in drops. The efforts to evacuate the urine quicker than the obstructed canal will admit, bring on a dysury, which is generally succeeded by a total suppression from the first debauch, or accidental cold. If the true

cause of this ischury is not immediately attended to, a violent fever, with reachings to vomit, supervenes, and sometimes a coma ensues. A temporary relief is frequently obtained by a profuse sweat coming on, which is extremely offensive from its strong urinous smell.

In total suppressions of urine, a puncture *in perinaeo* is recommended to be made with a trocar, till it enters the bladder. This done, by withdrawing the stilet, as in tapping, the urine is discharged.

Some prefer an incision made above the os pubis, as in the high operation for the stone; while others advise an incision *in perinaeo*, in the same direction as for the lateral method. The latter was once much in fashion among the most eminent surgeons in Paris, and was called catheterism. But these operations become necessary only when a suppression of urine arises merely from an inflammation of the neck of the bladder, and are not indicated with a view to a radical cure, when the ischury proceeds from obstructions of the urethra. For unless the obstructions in the urinary passage be removed, a fistula will unavoidably follow; and should the wound heal, a total suppression would be again induced.

Where a difficulty of making water, or a total suppression of urine arises from inflammation, the
cure

cure must be attempted by the method usual in other inflammations, with the assistance of the warm bath and catheter, as occasion may require. But where the disorder is caused by strictures or caruncles, topical remedies have generally been used, though with different intentions; some relying on the dilatation of the passage, whilst others have employed catheterics. It is well known that caustics and escharotics are applied with advantage to parts within our reach; but the uncertainty of their being conveyed immediately to the part affected in the urethra, and the injury they must do to sound parts, has occasioned their being exploded. Eschars, by whatever means produced, especially if by fire, must leave the urethra more constricted on healing the ulcers, than before, as is daily seen from burns in other parts; for the greater the loss of substance is, the more will the urethra be straitened. A most pernicious custom, however, prevailed among surgeons, of introducing such substances into the urethra, till the practice was happily reprobated by Mr. Daran, and it gave way to the use of the medicated candle.

The success that has attended the use of the medicated candle has occasioned the present practitioners to employ such as they found by experience best answered the purpose of dissolving
hardnesses,

hardnesses, or would suppress fungi, and prevent their return. Great success has been attributed to a medicated candle, composed of the gum plaster and red precipitate; but Mr. Bromfield informs us, that upon trial he found it give great pain. It indeed brought on a suppuration, but in the whole length of the canal, as well as in the part affected.

Medicated *bougies* appear to have been employed by surgeons so early as the year 1300, though they had long been disused before their late revival. Most of our surgical writers give formulæ for the composition of bougies. Mr. Bromfield advises those who are unacquainted with their use, never to make them of any composition in which stimulating gums or turpentine are ingredients; as he has seen repeated instances in scorbutic habits, of the consequent inflammation of the urethra having by consent of parts brought on a total suppression, which had like to have proved fatal. Whatever composition will soften and suppurate, without irritating, he observes, will be the best in strictures: the funguses will often yield to pressure alone, but their return must be prevented by such kind of desiccants as will not prove escharotic.

Under the use of the bougie, great attention must be paid to the discharge, which will some-
times

times be very considerable, even when the cure is effected. For after the bougie has performed its office in dissolving the indurations within the urethra, it often occasions a plentiful discharge from the glandular membrane, merely as an extraneous body. When this happens, by discontinuing the use of the candle, in a few days the weeping from the canal will not only abate, but totally disappear. Keeping the body open with lenient purgatives is generally of service.

That bougies may be employed successfully the candles ought not to be large, since they are intended only for an application to the diseased part ; but a bougie that fills up the canal of the urethra must irritate the glandular membrane along its whole extent, and thereby produce a discharge, which is not only unnecessary, but prejudicial.

Mr. Bromfield intimates an opinion, that there would be much seldomer occasion for the bougie if the cure of a gonorrhæa was assisted by topics ; such, he means, as would deterge an ulcer of the urethra, and not purse it up, and confine its virus by suddenly suppressing the discharge, which is sometimes followed either by a swelled testicle or bubo. An application to the urethra, he observes, that will open the ulcer again and promote a running, in consequence of which a
hernia

hernia humoralis or bubo disappears, would doubtless be thought a safe remedy, though a topic; and such, he adds, are used by many persons of eminence in the profession of surgery, though the cry against injections is in general so great. From the success which Mr. Bromfield has seen from the use of injections, he is inclined to think, that those who decry them are unacquainted with any but astringent or terebinthinate injections, which are likely to produce difficulties in making water, by creating strictures, or funguses in the urethra. He even affirms that he is certain many are of the same opinion with himself though they dare not pursue it with vigour in their practice, lest a stricture, bubo, chancre, blotches, or other venereal symptoms should appear some time after, and that these should be attributed to the method of cure, though really the consequence of a fresh venereal infection.

Mr. Bromfield is convinced from experience, whatever Mr. Daran may assert in his cases cured, that if the latter entirely omitted the use of the bougie at the expiration of a few weeks, though he had obtained all the suppuration he would desire from the part, yet his patients must be subject to a relapse. In this opinion Mr. Bromfield

is confirmed, from some cases which fall under his own observation.

The bougie formerly consisted of a small wax-candle; but the wax often melting in the urethra, and the wick sometimes breaking in the extraction, this kind is exploded, and the bougie is now made of cloth dipt in wax, or more generally plaster, and then rolled up into the proper form. These bougies are of all sizes, from the bigness of a knitting-needle to that of a large catheter.

The manner of securing the bougie is of the utmost consequence, as it should always be kept in contact with the diseased part, and not permitted either to advance or retire. The length of time proper for it to remain in the urethra, should, at first, not exceed four-hours, and the patient should always make water before it is introduced. When the patient is habituated to it, and can retain it longer without causing irritation, the advantage becomes greater; and when a bougie can be worn twice in the twenty-four hours, a period of four or five hours ought always to intervene between the withdrawing of one, and the introduction of another.

Mr. Bromfield justly observes, that the best way to support the credit, which the bougie has of late years acquired, is not to use it improperly. The state of the bladder is absolutely necessary to
be

be known, before any success can be promised from the use of medicated candles. For though obstructions in the urethra may have been the first cause of complaint ; yet, from the length of time they have existed, every organ concerned in the secreting, conveying, or containing the urine, may become affected ; consequently, though the obstructions in the urethra may be removed by the bougies, no benefit can be expected from them in the disorders of the bladder and kidneys.

OF RUPTURES.

Of the BUBONOCLE.

THE practice of surgery, in respect of ruptures or hernias, has been greatly improved by the moderns. These disorders are formed by the protrusion of the intestines, or omentum, or both, from the abdomen, and are named either from the parts they contain, or the places at which they protrude. The most common species of hernia is the bubonocle, which is formed by the descent of the intestine, or omentum, or both, through the rings of the abdominal muscles into

3
the

the tunica vaginalis of the testicle. It is particularly incident to children, when they cry, or expel their fæces; but as soon as these efforts are over, the part generally returns to its natural situation. Adults are also frequently seized with it, in consequence of falls, strains, great exertions of strength, difficulty of expelling hard fæces, or a general laxity of frame.

From the extraordinary thickness frequently attained by the hernial sac, or that part of the peritoneum which includes the ruptured gut or caul, Mr. Cheselden, and some others have been of opinion that the sac of a hernia was not an elongation of the peritoneum, but produced like that of an aneurism, or some other tumors, by mere pressure of the common cellular membrane; an opinion, however, which is clearly ascertained to be erroneous.

The signs of a common inguinal or scrotal rupture, are in general a swelling in the groin, or the upper part of the scrotum, beginning at the opening in the abdominal muscles, where the spermatic vessels pass down from the belly. The tumor feels differently, and has a different appearance, according to the parts it contains, and the quantity of them.

If the rupture consists of a portion of the intestine, and this be small, the size of the tumour

mour will be in proportion ; but if the gut be distended with wind, inflamed, or affected by any degree of stricture, it will become tense, and give pain upon being handled. When there is neither stricture nor inflammation, however, the tension will be little, and the tumor be attended with no pain.

If the hernia be of the omental kind, the tumor has a more flabby and a more unequal feel : it is in general perfectly indolent, and more compressible ; giving the scrotum a more oblong figure than an intestinal hernia ; and if the quantity of the omentum protruded be large, and the person an adult, the nature of the tumor is in some measure distinguishable by its greater weight.

If it consists both of intestine and omentum, the characteristic marks will be less clear than in either of the simple cases, but still sufficient for the information of such as are acquainted with these diseases.

In the beginning of a bubonocoele, and even in the generality of such as have been of long standing, the intestine returns of itself into the abdomen upon lying down, or at least, is easily returned by the hand. In this state of the disorder, the moderns content themselves with the application of a proper bandage, which is considered rather as a palliative than a radical cure.

But

But by a long continued use, it generally proves successful in young persons, and sometimes even in those who are advanced in years.

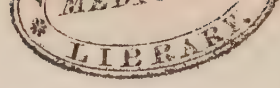
In reducing an intestinal hernia, it generally slips up all at once; making, in its return, a kind of guggling noise. If it consisted of a portion of the omentum, it retires more gradually, without any noise, and requires to be followed by the finger to the last. If both gut and caul contributed to the formation of the rupture, the former generally goes up first.

As soon as the parts are returned, the truss should be immediately applied, and worn without intermission. Care should also be taken, especially if the patient be an infant, to keep the parts on which it presses constantly washed, to prevent galling.

In a bubonocoele of the intestines, when the gut becomes inflamed by stricture, the case is very dangerous, and often terminates in a gangrene of the parts, unless the stricture be removed by the dilatation of the abdominal rings, which process is called the operation for the bubonocoele. To this end, plentiful bleedings and repeated have been universally approved; and some lay great stress on clysters of the smoke of tobacco. The use of warm fomentations, soft cataplasms, and oily embrocations are also advised; but Mr. Pott is of opinion

that such applications have in general been the occasion of much more mischief than good. The effect of them, he observes, can hardly reach beyond the skin and *membrana cellularis*, which they may relax by diminishing a little the pain that arises from their distention: but their influence will seldom extend to the immediate seat of the disease, the tendon of the oblique muscle; the enlargement or relaxation of which only can be of material advantage.

Instead of warm emollient applications, some eminent surgeons have strongly recommended the use of such as are cold. The former, they are of opinion, by rarifying the air within the intestine, and causing a greater expansion of its vessels, is more likely to increase than diminish the stricture of the parts, and, consequently, the inflammation; while cold applications, by lessening the bulk of the hernia, and exciting a contraction in the muscular fibres of the gut, will naturally favour its ascent. Certain it is, that many instances are produced in support of this practice, which has of late been so much recommended by Mr. Wimpey, as to merit particular attention. Against this doctrine some writers have supposed, that experience in those, as well as in other cases, may be a fallacious guide: for if the inflammation subsists several days, the
hernia



hernia is so diminished by the evacuations and symptomatic fever, that the intestine may be readily returned ; as frequently happens. This argument, however, seems not sufficient to reject a mode of practice that is founded on a number of well authenticated cases, and appears to have uniformly succeeded.

A diversity of opinion has likewise prevailed respecting the use of purging in a strangulated hernia ; some strongly advising cathartic medicines, and others placing no dependance upon them. Among the former, it is also disputed what kind is proper on this occasion ; some prescribing the lenient, and others advising the drastic species. Mr. Pott acknowledges that he entertains no high opinion of either. In respect of lenient purges, he observes it is not often that a patient in these circumstances can keep them upon his stomach ; and even when they are not rejected by vomit, they very seldom have force sufficient to answer the end proposed. He admits that the more stimulating purges are certainly better calculated to excite the peristaltic motion of the intestines (the one thing to be aimed at) and thereby free the confined part ; but, on the other hand, if they should not succeed, they add to the fulness and tension of the belly, as well

as to the heat and thirst. He means not, however, to be understood as being absolutely against the use of cathartic medicines; he would only signify that he has no great dependance on them, and that he thinks persisting in the ineffectual use of them often adds unnecessarily to the suffering of the patient.

Though Mr. Pott cannot say that he has seen frequent benefit from the exhibition of cathartics by the mouth, yet he has often experienced the good effects arising from acrid, stimulating clysters, and suppositories frequently repeated; particularly from the smoke of tobacco, for conveying which a pump is now made, which he has used very successfully. By these means he has seen very alarming ruptures returned, when no relief was expected from any thing but the surgical operation.

These methods alone, however, prove generally insufficient, without the surgeon's endeavour to return the prolapsed part; which being fairly reduced, is afterward to be kept from descending, by the proper application.

If the various means abovementioned fail of success, the next resource is to the operation for the bubonocoele, by which the strangulated parts may be set free. Unless this can be effected, the
inflammation

inflammation terminates in a gangrene, which puts an end to the patient's life.

Mr. Pott observes, that perhaps there is not in the practice of surgery a point which requires more judgment, firmness, or delicacy, than to determine the precise time, beyond which this operation should not be deferred, and for a surgeon to conduct himself so as to induce the patient to submit to it early enough for his preservation. The time in which a piece of gut will become gangrenous from stricture, is extremely uncertain, and depends upon circumstances which cannot be foreseen. Some ruptures, attended with violent symptoms of stricture, have been safely returned, by the hand only, at the end of several days, while others have become perfectly gangrenous in twenty-four hours from their commencement.

The experienced author abovementioned farther observes, that the signs or marks which chirurgical writers in general regard as proofs of the proper time for operating, are more frequently proofs that the time is just elapsed; and that instead of waiting for the arrival of such symptoms, we ought to have prevented them. On the other hand, to propose an operation of so much consequence before it shall be thought absolutely necessary, might excite injurious re-

flections on a surgeon's character. Mr. Pott's opinion on this subject is, that the operation ought always to be performed as soon as possible after it appears that all rational attempts, by large and free bleeding, the warm bath, clysters, &c. are found to be ineffectual, or that the symptoms rather increase than abate, while such means are used, and that the handling necessary for reduction becomes more and more painful. For if it be delayed until the inflammation has attained a certain height, though the parts, upon being laid open, are not found quite gangrenous, this is no proof that the want of success must be imputed entirely to the operation. That state of inflammation, he observes, either of the intestine or of the hernial sac, which is just not gangrenous, is not a state of safety; nor are we certain that the removing the stricture will at this time appease the symptoms, or abate the hazard. Such an alteration may have already been made in the intestine that a mortification will ensue, though the hernia be set free and returned into the belly. But our author contends that the difficulty of determining the precise time, affords the strongest reason for anticipating rather than waiting for it. For when in these cases such time arrives, or is nearly arrived, the risque of the operation becomes complicated with that arising

arising from the diseased state of the parts within, and the chance of success is thereby much lessened. A mortification of the intestine is not necessarily fatal; but so few are the instances of persons who have recovered from such a situation that it may justly be considered as deserving the most unfavourable prognostic.

When the operation is thought necessary, the manner of performing it, at present, is as follows :

The pubes and groin having been clean shaved, the patient must be laid on his back, on a table of convenient height, with his legs hanging easily over the end of it. Then with a straight dissecting knife, an incision must be made through the skin and membrana adiposa, beginning just above the place of prolapsion, and continuing it quite down to the lower part of the scrotum. On dividing the adipose membrane, there generally appears a few small, distinct, tendinous kind of bands, which lie close upon the hernial sac, and these, as well as the latter, must also be divided. This requires to be performed with a steady hand, and great caution, as the thickness of the sac is extremely various in different cases. It is observed, that in the bubonocoele, or that which is confined to the groin, the sac is most frequently thin, consequently more easily divided, and re-

quires greater attention in the operator. In the scrotal hernia, if recent, the sac is also usually thin, but if of long standing, sometimes of considerable thickness. Whatever be the state of it, however, if the operator has any doubt, he is advised, as soon as he has made a small puncture in what appears to him to be the hernial sac, to endeavour to introduce into it a probe, which will give him the desired satisfaction: for if he has not pierced the sac, the probe will be stopped by the cells of the common membrane, and if he has, it will pass in without any obstruction. The place to make the incision in the hernial sac, is about an inch and half below the stricture, and the opening need not be larger than just to admit the end of the operator's fore-finger; which, considering the great dilatability of those membranes will be a very small one. The fore-finger, introduced into this aperture, is the best of all directors, and upon it a narrow-bladed, curved knife, with a bold probe point, will be the only instrument necessary to finish the operation. With this knife on the finger, (the point of the former being always short of the extremity of the latter) the sac must be divided quite up to the opening in the tendon, and down to the bottom of the scrotum.

Upon

Upon the first division of the sac, there generally rushes out a fluid, which is different in colour, consistence, and quantity, according to the duration of the rupture, its size, and other circumstances. The fluid here spoken of has sometimes been mentioned as a defence against an accident from the knife, in the first division of the hernial sac, as if it kept the intestine at such a distance, as thereby to lessen the hazard of its being wounded. But Mr. Pott observes that this is a very fallacious circumstance, and never to be trusted, the security of the operation depending entirely on a competent knowledge of the parts, a steady hand, and an attentive eye.

Different operators, especially among the French, have proposed a number of different instruments for the safe performance of this incision; such as the *bistourie cachée*, the *bistourie herniaire*, the winged director, the blunt scissars, &c. all which are calculated for the defence of the intestine, in the division of the sac and tendon. But, in Mr. Pott's opinion, whoever will make use of the two knives just mentioned, will never stand in need of any other instrument, and may thereby perform the operation with more ease to himself, with less hazard to his patient, and with more apparent dexterity, than with any other.

The

The sac being laid open, the intestine for the most part pushes out immediately, (unless it is confined, by being enveloped in the omentum) and is found to be much more in quantity than it seemed to be, while it was confined within the scrotum.

At this period the operator is to try whether by gently drawing out a little more of the gut, its bulk can be so reduced as to admit of its being returned into the belly, without dividing the tendon. This has been found practicable in a small protrusion of the intestine; the difficulty of returning a large portion arising principally from the quantity of mesentery engaged in the stricture. But though it may now and then happen that a small piece of gut may be returnable without a division of the tendon, yet, if it cannot be very easily accomplished, Mr. Pott dissuades from attempting it; since in the state in which this part must necessarily be to require the operation thus far, any degree of force may prove prejudicial or hazardous.

It is generally advised to make the division of the stricture free, and large, as well to admit the easy return of the parts, as to prevent the inconvenience which it is supposed will be more likely to attend a small wound in a tendinous body than a large one. The incision certainly
ought

ought always to be made large enough for the easy return of the intestine, and to afford an opportunity of passing the end of the finger round on the inside, in case of any adhesion. But as too large an opening may be attended with very ill consequence, it doubtless ought to be guarded against.

It is the opinion of ingenious surgeons, that in a strangulated hernia, the disease is originally in the gut, and that the stricture is only an accident arising from the inflammation and distension of the former. I should, however, agree in opinion with Mr. Pott, who thinks that neither the fact nor the inference is in general true. An inflammation, he observes, most certainly may, and frequently does attack any part of the intestinal canal; consequently that part of it which happens to be included within a hernial sac may accidentally be so affected; but this case is very rare, and by no means to be admitted as a proof that the mischief done to the intestine, in the generality of strangulated ruptures, does not most frequently proceed from the stricture made by the tendon; neither ought it to be used as a dissuasive from performing the operation, whenever the latter would otherwise be thought expedient.

When

When the sac and stricture have been laid open and divided, the contained parts come into view, and according to the different circumstances of the rupture, and of the patient, will be found in different states, and require different treatment.

These states are reduced by Mr. Pott to three general heads. The contained parts will be found either in a sound, healthy, loose, unconnected state, and fit for immediate reduction; or, in a sound state, but from some particular circumstances, incapable of being immediately replaced; or, lastly, in a diseased state, and requiring to be treated accordingly.

If the rupture consists of a piece of intestine only, and that neither mortified, nor adherent, the sooner it is returned the better, and the better also the more gently it is handled for reduction.

If the intestine be accompanied with a portion of omentum, the latter (if in a proper state) should be returned first.

In returning the intestine, care should be taken to endeavour to put in that part first which came out last, otherwise the gut will be doubled on itself, and the difficulty and trouble be thereby much increased. In making the reduction, likewise the fingers should be applied to that part of the intestine which is connected with the mesentery, rather than its convex part, as it will not
only

only answer the purpose better, but be less liable to do mischief.

While the reduction is making, the leg and thigh on the ruptured side should be kept elevated, as this position of the limb will much facilitate the return of the parts.

Long confinement in the scrotum will in some persons produce slight adhesions, by tender filaments, which are for the most part easily separated by the finger, or divided by a knife, or scissars, whether the adhesions be of the parts of the intestine to each other, or to the hernial sac. If the adhesion be of the former kind, and such as proves very difficult to separate, it will be better to return the gut into the belly as it is, than to risque an inflammation by using force. But if the connection be with the sac, no danger can arise from wounding the latter, and a separation may therefore be made.

It has been said by some chirurgical writers, that if the piece of omentum adheres so closely that the operator does not choose to attempt a separation, it may safely be left; that it will first suppurate, afterwards shrink, and very little retard the healing of the sore. Mr. Pott observes, that what experience these gentlemen may have had in cases of this kind, he knows not, but he never yet has seen any, in which it could
be

be thought necessary to leave the patient in such circumstances, or in which an attachment of the omentum was incapable of being set free, either by dissecting its adhesions, or retrenching a part of it.

The prolapsed part being replaced, the next object of consideration is the hernial sac. This, if large, thick, and hard, will prove slow and difficult of digestion, render the edges of the fore tumid and painful, and often much retard the cure, by producing troublesome abscesses in the scrotum.

A considerable part of it may safely and properly be removed; no part of it being reckoned of any consequence except the posterior, or that with which the spermatic vessels are connected.

It has been proposed by some writers to pass a ligature round the upper part of the neck of the sac in order to procure the union of its sides; and thereby more certainly preclude the future descent of any thing from the belly; but this proposal seems to be founded in speculation, and is liable to many objections. The principal of these are, that if the ligature was not made tight, it could serve no purpose, and if it was, it might injure the spermatic chord, if the latter was included in it. By preventing part of the discharge,

charge, it might also occasion very troublesome symptoms.

Such are the methods of reducing a hernia when the parts are sound, and fit for being returned into the abdomen ; but if these should be in any degree affected with gangrene, greater circumspection becomes necessary.

If the omentum be so altered as to be plainly unfit for immediate reduction, chirurgical writers universally admit that the altered part may be extirpated. The method recommended for this purpose is to make a ligature on the sound part of the omentum, just above what is altered, and then to cut off the latter immediately below such ligature. The reason assigned for this method is, the danger of hæmorrhage from the divided vessels, if the omentum be cut in a sound part, and the apprehension of mischief, likely to ensue from the shedding of sanies or matter into the belly, if the division be made in the diseased ; but Mr. Pott observes neither the one nor the other of these apprehensions is well founded, nor are they sufficient reasons for such practice.

The fear of hæmorrhage is almost, if not entirely, without foundation, as he has several times experienced ; and the discharge of a fluid of whatever kind from the border of the divided
membrane,

membrane, is not of the smallest consequence; nor, if it was, would the ligature prevent it, as must appear upon attentive consideration of the subject.

But this is not all: Mr. Pott adds, he is convinced by experience, that making a ligature on the caul is not only unnecessary, but frequently pernicious, and sometimes even fatal. In cases where this method has been followed, he has seen the omentum become diseased, and gangrenous in all its extent, above the ligature, between it and the stomach, though it had not been gangrenous before it was tied, but on the contrary, in a sound state, and only tied in order to its being more securely retrenched. He has seen a whole train of bad symptoms, such as nausea, vomiting, hiccup, fever, anxiety, restlessness, great pain in the belly, and an incapacity of sitting upright, or even of moving, without exquisite pain, precede the death of a man whose omentum was tied merely because of its enlargement, whose intestines uninterruptedly from the time of the operation to his last hour, performed their proper office, and were found untainted after death; but whose omentum appeared in an exceeding inflammatory state in general, and in many parts above the ligature gangrenous.

Mr. Pott farther observes, that the direction given by many writers to put the patient's body in motion, or to give him a kind of shake, in order to correct the derangement produced by tying the caul, would be too absurd to mention, did it not serve to prove, that even the very men who have persisted in this pernicious practice, were themselves sensible of some of its probable ill consequences, though they would not try to remedy them. Mr. Pott will not affirm, that a dangerous or fatal flux of blood never ensued from the division of the omentum, without ligature: but he can truly say that he never saw one; that he has several times cut off portions of it, without tying, and has never experienced any bad effects from it, though he has always made the incision in the sound part. Upon the whole, he thinks the ligature both unnecessary and pernicious, and that any portion of the omentum, necessary to be removed, may safely be cut off, without any previous tying.

The best and safest method of performing this operation, is with a good pair of straight scissars; having first expanded the caul, as well on account of its more easy division, as to prevent the mischief which would attend the cutting a piece of intestine, if the latter should happen to be wrapped up in it. If any fear of hæmorrhage

remains, the excision may, in the case of mortification, be made just within the altered part of the omentum; by which means no more will be cast off than there must be where a ligature is made.

If the gangrene or sphacelus have taken possession of the intestine, and consists of a small spot only, which by casting off, might endanger the discharging its contents into the belly, the method of endeavouring to prevent this inconvenience is, by connecting the upper part to the wound by a needle and strong thread. By this means, when the mortified part separates, the fæces are for some time discharged from the wound, which has afterwards been known to contract gradually, and heal. But whether the event proves so fortunate or not, this method of securing the gut should never be omitted.

In making this artificial attachment of the intestine to the inside of the belly, care must be taken not to wound the gut. The needle must be passed through the mesentery, at a small distance from the intestine, and such a portion of that body included within the stitch, as shall be likely to hold fast enough to render the connection probable. If the altered portion of the gut be of such extent, as to require incision, but yet not so large as to prevent the extremities of the

divided parts from being brought into contact with each other, their union must be endeavoured by future. In performing this, the ends of the intestine should be so disposed as to lie a little over each other, by which means the future will be the stronger. When the two ends are thus sewed together, they must both be fastened to the inside of the belly, at the upper part of the wound, that in case the union should not take place, the discharge of fæces may, if possible, be made through the groin. But if the disease be of such extent as to preclude the bringing the two ends together, the treatment must be different. In this case, as it is impossible to preserve the continuity of the intestinal canal, the aim of the surgeon must be to prevent the contents of it from being shed into the belly, and to derive, through the wound in the groin, all which should, in a sound and healthy state, pass off by the rectum and anus.

To accomplish this, he must take care that neither extremity of the divided intestine slips out of his fingers. Then with a proper needle, and a strong ligature, he must connect both of them to the upper edge of the wound, by a future not slight, lest it should cast off before a proper degree of adhesion be procured; and it

must also be made in such a manner as to preserve the mouth of the gut as free and open as may be; on which depends the small remaining chance of the patient's recovery. Mr. Pott observes, that the method advised by La Peyronie, of stitching the mesentery instead of the intestine, is judicious and right.

The dressing in this case is directed to be as soft and light as possible, and nothing to be admitted which can irritate or give pain. The patient must observe the strictest regimen, and maintain the most perfect quietude both of body and mind. In respect of medicine, whatever is administered must be calculated to procure rest and ease, to quiet the febrile heat, to keep the body open, and, if necessary, (as it most frequently is,) to resist putrefaction.

This is a summary of the best practice, and of the most approved doctrine in these circumstances; but so extremely hazardous is such a situation, that a fortunate event is rather to be wished than expected, and no prudent surgeon will ever risque his reputation by a favourable prognostic.

An opinion formerly prevailed, that after the portion of intestine, or omentum, which composed a hernia, was replaced, while sound and unhurt,
either

either by inflammation or gangrene, if a new descent of them was prevented by the immediate application of a bandage, no mischief was likely to ensue, and that while the truss performed its office properly, the patient was thereby free from danger. Within these few years, however, it has been said by some French writers, that the hernial sac may be so loose and unconnected with the spermatic chord, that it may be returned into the belly, while it contains a portion of intestine, labouring under a stricture made by the neck of the sac. In support of this assertion, some instances are adduced; but they must remain extremely questionable, when contradicted by the positive evidence of Mr. Pott, who declares that he never saw, either in the dead or the living, any reason to suppose the practicability of returning into the abdomen the hernial sac, after it has been out any considerable length of time.

Ruptures through the openings of the tendons of the oblique muscles in females, are liable to the same symptoms, and require nearly the same general treatment, as the inguinal ruptures of males; like which they frequently admit of perfect cure, if not neglected or improperly managed at first. The same kind of truss is also necessary, and the same cautions in regard to the manner of wearing it.

The open texture of the cellular membrane surrounding the spermatic vessels, and the laxity of the scrotum, render the hernial tumor, much larger in males than it can well be in females; neither can it descend so low in the latter as it frequently does in the former.

The female hernia, if recent, has much the same appearance as the bubonocoele in men; and when more of the gut or caul is prolapsed than will lie conveniently in the groin, it pushes down into one side of the labia pudendi; and sometimes forms a tumor of considerable size.

Mr. Pott, however, observes, that the piece of intestine which is strangulated in the female bubonocoele, is sometimes so small as to occasion very little tumor, and therefore, if recent, is very often, in modest women, not known to be the cause of the symptoms it produces. If by accident it returns back before it is hurt in its texture, the disease passes for a cholic; but if it proves fatal by mortification, it is taken for the iliac passion. Mr. Pott therefore advises every medical person, who may be called to women labouring under such complaints, to be very attentive to them, and if the symptoms run high, never to omit enquiry, whether there be any tumor in the groin, belly, or pudenda; and if there be such, to be informed of what nature it is, before

fore they proceed any farther, and lose time for the proper treatment of the disease.

As the means of distinguishing these complaints, it is remarked, that in the cholic, the pain is either round about the navel, or diffused all over the belly. The pain which arises from a strangulated hernia is likewise very frequently general all over the belly; but is always more particularly acute at the groin, which is also remarkably tender to the touch. The tension of the belly, and the vomiting in the *passio iliaca*, are in general the first symptoms, or at least appear very early; whereas they do not come on in ruptures till after some time. But notwithstanding these, and some other distinctions which might be made, the best way of arriving at certainty, is to examine the parts where such tumor may be expected.

Of the *HERNIA FEMORALIS*.

THE *hernia femoralis* is formed by the descent of the intestine or omentum into the inside of the thigh, through the opening made by the arch of the os pubis and the ligamentum *Poupartii*, otherwise called the ligamentum *Fallopium*;

so that the situation of the tumor will be on the femoral artery and vein.

It is remarkable, that notwithstanding the frequency of this species of rupture, it was not described by any chirurgical writer before Verheyen; or at least, in terms so obscure as not to be understood.

The hernia femoralis is much more frequent in women than in men; occasioned, as some suppose, by the breadth of their ossa innominata, which allow room for the reception of the viscera whenever they are violently compressed. Others, however, suppose the reason to be, that in general the passages for the spermatic chords in men, are, from their wideness, more subject to dilatation than the openings of the femoral vessels; and the passages for the ligamenta rotunda in women, are, from their narrowness, less liable to dilatation than the other openings.

The symptoms excited by this species of hernia are very nearly the same with those of the inguinal, and require nearly the same treatment; excepting that in the former, the part to be reduced should be pressed directly upward, or a little toward the pubes, and in the latter the pressure ought to be made obliquely toward the os ilium. When it cannot be reduced by the hand only, recourse must be had to the chirurgical

cal operation, concerning the manner of performing which, some writers are divided in opinion. To avoid the inconvenience of wounding the spermatic vessels, in a male, by cutting the ligamentum Poupartii perpendicularly upwards, Mr. Sharp advises that the incision be made obliquely outwards. Others, however, and particularly Le Dran, who do not seem aware of the objection here stated, provide rather against the danger of dividing the epigastric artery, which they think might be wounded by the method above mentioned. But this accident, Mr. Sharp contends, ought not in the least to embarrass an operator; for, were the epigastric artery much larger than it is, we ought instantly to take it up, now when the use of the crooked needle is become so familiar.

Mr. Pott, who admits the objections against both the methods above proposed, observes, that it is well worth while to try, if the hernia cannot be returned without dividing the tendon; as there is a considerable space between the os ilium, and the os pubis, in which to manage such reduction. Of the two consequences abovementioned, however, that respecting the spermatic chord is in his opinion the most to be regarded; as the total division of it would in all probability render the testicle on that side useless. If
the

the artery be wounded, he agrees with Mr. Sharp, that it must be taken up with a needle and ligature; but he observes, that the doing is not so easy as the directing it to be done. The epigastric artery in many men is near as large as the smaller carpal, departs immediately from the trunk of the crural, and, at its origin, lies in a bed of fat and cellular membrane. In dividing this artery, therefore, the stream of blood would be pretty brisk, and the passage of the needle round would certainly be troublesome, if not hazardous, from the vicinity of the crural vessels. Upon the whole, Mr. Pott is of opinion, that as this operation must be attended with a good deal of trouble, and some risque, it is much better to avoid the necessity, which he thinks may almost always be done, considering the large space between the os ilium, and the os pubis, and that the space is occupied principally by cellular membrane, and fat; or if the division of the ligament be unavoidable, let the operator be particularly careful to keep the extremity of the probe-pointed knife within the end of his fore-finger, held up tight just behind the edge or border of the tendon, and to make as small an incision as may be necessary. The probe-scissars, the common instrument in use for this operation, Mr. Pott declares

to

to be in this case particularly hazardous and improper.

Of the CONGENIAL HERNIA.

THE congenial hernia is that kind of rupture, in which the portion of intestine or omentum is found in contact with the testicle; the bag containing it being formed by the tunica vaginalis testis. This disease, though not infrequent, was unknown till within these few years.

In order to explain the manner in which this kind of rupture is formed, it is necessary to take a general view of the seat of the disease.

The bag which is designed to make the future tunica vaginalis testis, lies in the groin, under the skin and adipose membrane, and has an orifice always open to the abdomen of a foetus. Through this orifice the testicle at proper time descends, first into the groin, and then most commonly into the scrotum, where after remaining some little time, the opening from the belly generally shuts, and is obliterated. By the closing of this passage, a bag or cavity is formed, containing the testicle covered only by its tunica albuginea.

The time at which the testicles are thrust forth from the belly is uncertain, as is likewise that of
the

the perfect closing of the sacculus. In some they pass out before birth, in some immediately after, but in others more late. In some they never pass out at all, and in others they arrive in the groin, or scrotum, at different and perhaps very distant times; the process of nature in those parts, as in others within the sphere of the animal œconomy, being variously effected, and sometimes even totally prevented by accident, or mal formation.

One of these accidents is the intrusion of a piece of intestine, or omentum, into the orifice of the tunica vaginalis; by either of which the closing of the passage is prevented, and a hernial sac is formed of a particular kind. This sac being the vaginal coat of the testis, must, if that body has fallen from the abdomen, contain the intestine, omentum, or whatever forms the hernia, and the testicle, in immediate contact with each other, and thus produce the hernia distinguished by the name of Congenial.

The appearance of a hernia in very early infancy, will always afford reason for thinking that it probably is of this kind; but a hernia, in an adult, can never be considered as of the congenial species, unless it likewise has existed from infancy. The congenial rupture has no external mark or character, by which it can be distinguished

guished from one contained in a common hernial sac.

When this rupture is returnable, it ought, like all others, to be reduced, and constantly kept up by a proper bandage, and when attended with symptoms of stricture, it requires the same chirurgic assistance as the common hernia.

Mr. Pott observes, that in very young children, there are some circumstances relative to this kind of rupture, which are worthy of attention, as they may prove of material consequence to the patient.

A piece of intestine, or omentum, may get pretty low down in the sac, while the testicle is still in the groin, or even within the abdomen. In this case the application of a truss would be highly improper; for in the latter it might prevent the descent of the testicle from the belly into the scrotum; in the former it must necessarily bruise and injure it, give a great deal of unnecessary pain, and can prove of no real use. Such bandage therefore ought never to be applied, on a rupture in an infant, unless the testicle can be fairly felt in the scrotum, after the gut or caul is replaced; and when it can be so felt, a truss can never be applied too early.

Mr. Pott farther observes, that as this kind of hernia is liable to stricture with all its consequences,

quences, as much as that which is contained in a common hernial sac, and equally subject with the latter to the necessity of the surgical operation, it may be well worth an operator's while to know, that an old rupture, which was originally congenial, is subject to a stricture made by the sac itself, independent of the abdominal tendon, as well as to that which is made by the tendon. Whether this be owing to the weight of the testicle at the bottom of the sac, and the endeavours which nature makes to close the upper part of the tunica vaginalis, or to what other cause, Mr. Pott does not determine; but the fact he has several times noticed, both in the dead and in the living.

In this kind of hernia Mr. Pott has also more frequently found connections and adhesions of the parts to each other, than in the common rupture. But he adds, there is one kind of connection sometimes observed in the congenial hernia, which can never occur in one that is included in a common hernial sac, and which may require all the dexterity of an operator to set free. The adhesion here meant is that of the intestine with the testicle.

If a large quantity of fluid should be collected in the sac of a congenial hernia, and by adhesions and connections of the parts within, the entrance

trance into it from the abdomen, should be totally closed, (a case which Mr. Pott has twice seen) the tightness of the tumor, the difficulty of distinguishing the testicle, and the fluctuation of the fluid, may occasion it to be mistaken for a common hydrocele; and if without attending to other circumstances, but trusting merely to the feel and look of the scrotum, a puncture be hastily made, it may create a great deal of trouble, and possibly do fatal mischief.

From what has fallen within Mr. Pott's observation, he is inclined to believe that the sac of a congenial hernia is very seldom, if ever, distended to the degree which a common hernial sac often is. It also, from being less dilated, and rather more confined by the upper part of the spermatic process, generally preserves a pyriform kind of figure. For the same reason, it is also generally thinner, and will therefore require more attention and dexterity in an operator when he is to open it. To these remarks, Mr. Pott adds, that common ruptures, or those in a common sac, are for the most part gradually formed, that is, they are first inguinal, and by degrees become scrotal; but the congenial are seldom, if ever, remembered by the patient to have been in the groin only.

Of the EXOMPHALOS.

THE exomphalos, or umbilical rupture, is so called from its situation, and like other hernias, consists of a portion of the intestine, omentum, or both. In umbilical ruptures of long standing, the quantity of omentum is sometimes very great. Besides these contents, some others of the viscera have also been found in the sac of an umbilical hernia, which is always formed by the protrusion of the peritoneum; though in old ruptures this is so difficult to be distinguished, that some have doubted whether the exomphalos has a hernial sac or not.

It is observed that infants are very subject to this disease, in a small degree, from a separation of the funiculus; but, in general, it either disappears as they gather strength, or is easily cured by wearing a proper bandage. In females, the continuance of this disorder proves particularly injurious, by the increase it is liable to receive during pregnancy, which state is frequently the cause of it. During gestation, it is often very troublesome; but after delivery, if the contents have contracted no adhesion, they will frequently return, and may be retained by a proper bandage.

In some of these hernias the entrance of the sac is large, and the parts easily reducible; but in others they are difficult, and in some absolutely irreducible. Of the last kind many have been suspended for years in a proper bag, and have given little or no trouble. But in this situation, those who are advanced in life, and in whom the rupture is large, are generally subject to cholics, diarrhæas, and, if the intestinal passage be obstructed, to very troublesome vomitings.

The cure of this disorder is either radical or palliative, the former of which is mentioned by several writers, both ancient and modern, as capable of being obtained by ligature. The methods by ligature are two. In the one the skin covering the tumor is to be lifted up with the finger and thumb, or with a small hook, to free it from the intestine underneath, and then a ligature is to be made round the basis of the tumor, so strict as to procure a mortification of all that part which is anterior to the ligature. In the other, the skin is to be elevated in the same manner, and a needle, armed with a double ligature, is to be passed through the basis of the tumor; which is to be tied above and below, or on each side, so tight as to produce the same effect. Previous to the drawing the ligature

close, it is advised to make a small incision in the top of the tumor, large enough to admit the end of the fore-finger, and with it so to depress the intestine, or omentum, as to prevent their being engaged in the stricture.

The intention in both these methods is, by destroying the lax skin covering the top of the tumor, to produce a cicatrix which shall bind so tight, as to restrain the parts from any future protrusion. When we consider the obvious objections against these methods, it is surprising to find Heister regret that the ancient practice should have fallen into disuse; and from the influence of such an authority, there may perhaps be reason to dread the revival of them.

In young persons, where the herniæ are small, they are generally cured by a bandage worn a proper time; but in old persons, and large tumors, the only probable remedy is the palliative, the danger of producing a mortification being so great.

In the umbilical, as in the inguinal hernia, when the parts are irreducible by the hand only, and are attended with such stricture as occasions bad symptoms, the surgical operation becomes necessary. But Mr. Pott informs us, that though he thinks the early use of the knife highly advisable in the inguinal and scrotal hernia, he
cannot

cannot urge it so much in the umbilical: the success of it is very rare, and he should make it the last remedy. At the same time, he is much inclined to believe, that the bad symptoms which attend those cases, are most frequently owing to disorders in the intestinal canal, and not so often to a stricture made on it at the navel, as is supposed.

When the operation becomes necessary, it is performed by dividing the skin and hernial sac, in such a manner as shall free the intestine from stricture, and enable the surgeon to return it into the abdomen, if sound, and not adherent. But if it be gangrenous or mortified, the vitiated part must be removed, and the fœcal discharge be derived through the wound. Chirurgical memoirs afford some instances of persons, who in such a situation, have protracted their lives by these means.

Of the HERNIA VENTRALIS.

A ventral hernia is said to exist when the viscera protrude between the interstices of the muscular fibres in any part of the abdomen; but it is most frequently found between the recti muscles, in some part of the linea alba. This disorder is to be treated in the same manner as other rup-

tures : when accompanied with stricture, the orifice must be carefully dilated ; and a truss must afterwards be worn upon the part, where, without this expedient, the tumor sometimes becomes enormous.

The hernia foraminis ovalis is another species of rupture first observed by the moderns ; it is extremely rare, and is formed by a descent of the viscera through the foramen ovale of the os pubis, or, as called by some, the great foramen of the ilchium. The tumor in men is situated near the perinæum, and in women near one of the labia pudendi. In both sexes it lies on the obturator externus, between the pectineus muscle and the first head of the triceps femoris. It must be treated as other ruptures, and, after reduction, be supported by a particular kind of truss.

Almost every part contained in the belly or pelvis, is, by the dilatation of its connecting membranes, capable of being thrust forth, and of producing swellings, all which are called herniæ. Thus we meet with instances, in writers, of a hernia of the stomach, an intestinal hernia of the vagina, and a hernia of the urinary bladder.

The reduction of ruptures, in general, being an obvious mechanical operation, has for ages
afforded

afforded but little room for chirurgical improvement; but the ingenuity of the moderns has been successfully exercised in the contrivance of trusses for the various species of herniæ.

Of the HYDROCELE in general.

HAVING treated of the *true* herniæ, or those tumors occasioned by the removal of certain parts from their natural situation, we now proceed to the consideration of what are called by surgeons *false* or *spurious* herniæ, which are original disorders in the parts in which they are seated. They derive their names either from their supposed contents, as the pneumatocele, hæmatocele, and hydrocele; or, from the alteration made by the disease in the natural structure of the parts concerned, as the varicocele, cirsocele, and sarcoccele; to which some have added that inflammatory defluxion on the testicle, commonly called hernia humoralis.

Respecting the pneumatocele, Mr. Pott observes that it is a mistake; there being no tumor of this kind, and in this situation, in a living animal; though it is described by many writers, both ancient and modern, and said to be a disorder to which infants are particularly liable.

The complaint so described, and which nurses and ignorant people do still call a wind-rupture, is not what they suppose it to be; neither is it produced by wind: it is either a true intestinal hernia, or a species of hydrocele.—The *sarcocele*, which is an enlargement and distension of the blood-vessels of the scrotum, the same author observes, is very seldom an original disease, independent of any other; and when it is, is hardly an object of surgery.—The *cirsocele*, or varicose state of the spermatic vein, though really a disease, and sometimes very troublesome to those who are afflicted with it, yet is seldom capable of much relief, beyond that of a suspensory bandage.

The term *hydrocele*, in a literal sense, signifies any tumor produced by water; but it is restricted by surgeons to those tumors which occupy either the membranes of the scrotum, or the coats of the testicle, and its vessels. The former of these is, properly, only a symptom of a disease, being generally accompanied with an *anasarca* of the whole body; but the latter is local, and frequently found in persons who are free from all other complaints.

Notwithstanding the essential and obvious distinction between those two diseases, they have, as Mr. Pott observes, been confounded together by
the

the majority of writers ; an error which has produced an infinite variety of extravagant conjectures concerning their origin and nature, and laid the foundation for pernicious methods of practice. The late Dr. Monro, professor of anatomy at Edinburgh, and Mr. Samuel Sharp, formerly surgeon to Guy's Hospital, were the first writers who have rationally explained the true nature and theory of these diseases, which have since been farther elucidated by the valuable observations of Mr. Pott.

In order to attain a clear idea of these diseases, it is necessary to have recourse to an anatomical description of the parts concerned ; and with this we are well supplied by the judicious writer last mentioned.

The spermatic vessels, like most of the contents of the abdomen, lie behind the peritonæum ; enveloped in the common tela cellulosa, or cellular appendix of that membrane. The arteries, which are two, arise from the trunk of the aorta, in the mid-way between the emulgent, and lower mesentery. At their origin they are very small, and contrary to all the other arteries of the body, seem rather to increase in diameter as they descend. In their passage downwards, they impart several branches to the cellular membrane which invests them ; and before they

arrive at the testicles, are divided into four or five principal branches, one of which goes to the epididymis, and the others to the testis; of which they compose the greater part, after having passed the tunica albuginea, and being convoluted in a wonderful manner. From these convolutions of the spermatic artery is secreted the semen, which is immediately received by the vessels called the vasa efferentia. These vary in number in different persons, being from ten to fifteen, more or less. When collected they form the globus major, or larger extremity of the testis, called the epididymis. They afterwards unite into one tube, which being contorted in numberless convolutions, forms the remaining part of the same body. From the smaller extremity of the epididymis proceeds the vas deferens, or that tube through which the semen is conveyed from the testis towards the penis. This tube is enveloped in the same common tela cellulosa which invests the spermatic artery and vein. When it has got just above the edge of the os pubis, it separates from these vessels, and passing down behind the peritonæum, proceeds to the inferior part of the neck of the bladder, where it deposits the semen in the vesiculæ seminales, or in the receptacle appointed for that purpose.

When

When the feminal secretion is performed, the blood returns into the general mass, by the spermatic vein; which, on the right side empties itself into the vena cava, and on the left into the emulgent.

While the spermatic vessels are within the cavity of the belly, the cellular membrane, in which they are enveloped, is much more lax and tender, and is indued with larger cells, than it is on the outside of the same cavity. As they go under the transversalis, and obliquus internus muscles, and through the obliquus externus, they receive a considerable addition of cellular membrane from the adjacent parts; and having passed through the tendinous aperture of the last mentioned muscle, they, with their cellular tunic, are enveloped with the expansion of muscular fibres, called the cremaster.

The membrane surrounding all that part of the spermatic vessels, which is on the outside of the abdomen, is called the tunica communis, or tunica vaginalis of the chord; and is, as has been already observed, merely cellular, firmly adherent to the spermatic vessels, in every part, and plentifully furnished with lymphatics.

Mr. Pott observes, that it is of great importance to have a just idea of the structure of this part of the tuniculus spermaticus; the old
term,

term, *tunica vaginalis* conveying a very false one. It implied that the vessels were contained within it, as in a sheath; and that if these vessels were not there, this coat would form an empty bag, consisting of one cavity only; than which nothing can be more untrue. This, he observes, is one great source, whence many of the errors which have been committed in the description of such diseases, as have, or are supposed to have, their seat in this part, have sprung.

The coats of the testicle are only two, viz. the *tunica vaginalis*, or the bag which loosely invests it, without any adhesion to it, except in one particular part; and the *tunica albuginea*, or that membrane which is the immediate and proper covering of its vascular structure. A true and clear idea of these is absolutely necessary to the right understanding the diseases to which this gland is subject. For obtaining this purpose, the testicles must be examined, not only in an adult state, but in the infantine, and also in that before birth; each of these states being accompanied with its respective peculiarities, which tend to explain the true nature of the diseases in those parts.

The testicles of the human species are always formed within the cavity of the belly, where they remain until the time of birth, or very near it. While they lie within the abdomen, they are covered

covered by only one coat, which firmly adheres to their vascular structure, and is evidently derived from the peritonæum, in the same manner as the outer coat of the other viscera of that cavity. Their situation, during the first months, is higher than in the latter ; and as the foetus increases in size, they slip gradually lower. Within the cavity of the abdomen, on each side, a little below the testes, is a little opening, which leads immediately into a small, but firm membranous bag, or cyst, the upper part of which passes through the opening into the tendons of the obliqui externi muscles ; while its lower part lies on the outside of these muscles, in the groin, enveloped in the common tela cellulosa. These orifices are always open until birth, and most frequently for some time after ; during all which space the sacculi have free and open communication with the cavity of the belly.

By means of those orifices, the testicles pass from the cavity of the abdomen, through the tendinous apertures, into the sacculi in the groins. But the time in which they make this transit is uncertain. Sometimes it happens just before birth ; sometimes immediately after ; sometimes they drop directly into the scrotum ; and sometimes they remain a considerable time in the groins. It also now and then happens, that they
never

never pass through the muscle at all, but remain for ever within the belly. In general, however, they soon pass from the groins into the scrotal bags, the communication between the latter and the belly continuing open some little time longer.

If, after the testicles have descended into the sacculi, the latter be laid open, the testicles will appear to be loosely enveloped by them; without any cohesion, except in one part, where this bag and the proper coat of the testicle (the albuginea) are so firmly united, as to be plainly a continuation of one and the same membrane. While the communication with the belly continues free and open, if the sacculi be divided from the bottom upward, it will as evidently appear, that the membrane of which they are composed, is a continuation, or process, of that part of the peritonæum which lines the muscles of the abdomen.

Some time after birth, the necks of these sacculi become close and impervious; from which period all communication between their cavities and that of the belly ceases. The time when this happens is also uncertain. Mr. Pott has seen them perfectly closed within a week, and open at the end of two months; nor do they both necessarily become close at the same time.

It

It sometimes happens, that while those passages are open, a piece of omentum or intestine insinuates itself into one of them, and preventing its closing, produces the congenial hernia. It also sometimes happens, that the spermatic vessels not being sufficiently closed, one of the testicles rests in the groin, just without the opening of the abdominal muscle, and by not becoming pendulous in the scrotum, the orifice of the neck of the sacculus is not closed; even though no portion of the gut or caul has descended into it.

When these orifices have been once perfectly closed, there never is any future communication between the cavities of the sacculi and that of the belly. The upper part, or neck, now loses all appearance of a distinct canal; and the lower part, or sac, loosely invests the testicle, and its epididymis, without any adhesion, except in the hinder part. The cavity of this sac is constantly kept moist by the exudation of a fine fluid, which is as constantly absorbed; so that while these parts enjoy a sound healthy state, the fluid is no more in quantity, than what just serves to lubricate the surfaces of both membranes, and thereby prevent any unnatural cohesion of them with each other.

Mr. Pott observes, that from these premises, the following inferences, serving to explain the
true

true nature and seat of some of the diseases in question, may be deduced.

1. That the sacculi, or bags, found in the groins, are originally formed parts.

2. That they are placed there for the future reception of the testicles; and that when the upper part, or neck, of one of them becomes close and impervious, the lower part, or sac, forms what is properly called the tunica vaginalis testis; which is therefore a true and original process of the peritonæum.

3. That of all contained within the scrotum, these sacculi are the only parts which ever naturally communicate with the cavity of the belly.

4. That after a certain space of time this communication ceases.

5. That whatever fluid may be shed from the spermatic vessels, or collected, or extravasated, in the cells of the tunica communis, or in those of the dartos; yet no part of such fluid can be derived from, or received into the cavity of the tunica vaginalis testis.

6. That a total failure of the secretion of that fine fluid, which should moisten the inside of the vaginal tunic, and the outside of the albuginea, must be followed by an unnatural cohesion of those membranes with each other; and either a
partial

partial or total abolition of the cavity of the former.

7. That if more of this fluid be deposited, than the absorbent vessels can take up ; or if the latter do not execute their office, such fluid must be accumulated within the cavity of the tunic ; from which there being no natural outlet, the consequence must be a gradual distension and enlargement of it.

8. That the natural communication between the cavity of the tunica vaginalis and the belly, not being shut until some time after birth, it may become close at its upper part, while there is a quantity of fluid in the lower, too large for the absorbent vessels to take up immediately ; and consequently, that such infant will, until that office be executed, labour under a true hydrocele of the tunica vaginalis testis ; a case which is very frequent, though generally mistaken for a wind-rupture.

9. That the fluid of that kind of hydrocele, which is formed by the sac of a congenial hernia, must be lodged within the cavity of the vaginal coat ; while all collections of serum, in the sacs of all other kinds of hernia, must necessarily be distinct from the tunic.

If we except the anasarcaous tumor of the scrotum, which is accompanied with an universal

dropfy, and therefore only a symptomatic difeafe, there will remain of the hydrocele three different kinds. The firft is that which confifts of a collection of water, in the cells of the tunica communis, or cellular membrane, enveloping and connecting the fpermatic veffels. The fecond, that which is formed by the extravafation of a fluid, in the fame coat as the preceding; but which, inftead of being diffufed through the cellular ftructure of it, is confined to one cavity, or cyft, in which all the water conftituting this fpecies of difeafe is contained; the reft of the membrane remaining in its natural ftate. The third is that which is produced by the accumulation of a quantity of water, in the cavity of the tunica vaginalis teftis.

Of the HYDROCELE of the CELLS of the TUNICA COMMUNIS.

IT has already been obferved, that the fpermatic veffels, from their origin quite down to their infertion into the tefticle, are enveloped in the tunica communis, a membrane which has no particular cavity, but is merely cellular. That while it remains within the cavity of the belly, its cells are lax and large; and when it has
 paffed

passed out thence, and has formed a part of the spermatic process, by enveloping its vessels, its cells are rather smaller, and the membrane composing them firmer. That it is included within that thin expansion of muscular fibres, called the cremaster; and that a great number of lymphatics, passing from the testicle to the receptaculum chyli, are always to be found in it.

When the disease is simple, it is perfectly local, and confined entirely to the membrane forming the tunica communis; nor does it give a great deal of trouble, unless it arrives to a considerable size. Being likewise much less frequent than either of the two other kinds of hydrocele, it is generally but little known or attended to. By some practitioners it is mistaken for a varix of the spermatic chord; by others, for the descent of a portion of omentum, which having contracted an adhesion, cannot be returned. Sometimes, however, it becomes so large, as to require very serious attention.

While it is of a moderate size, Mr. Pott describes the state of it to be, in general, as follows. The scrotal bag is free from all appearance of disease; except that when the skin is not corrugated, it seems rather fuller, and hangs rather lower on that side, than on the other; and if suspended lightly in the palm of the hand, feels

heavier : the testicle with its epididymis may be felt perfectly distinct below this fulness ; neither enlarged, nor in any manner altered, from its natural state. The spermatic process is considerably larger than it ought to be ; and feels like a varix, or like an omental hernia, according to the different size of the tumor. It has a pyramidal kind of form, broader at the bottom than at the top. By gentle and continued pressure, it seems gradually to recede or go up ; but on the pressure being removed, drops down again immediately ; and that as freely in a supine, as in an erect posture. It is attended with a very small degree of pain or uneasiness, which is not felt in the scrotum, however, but in the loins.

If the extravasation be confined to the spermatic process, the opening in the tendon of the abdominal muscle is not at all dilated, and the process passing through it, may be distinctly felt. But if the cellular membrane which invests the spermatic vessels within the abdomen be affected, the tendinous aperture is enlarged ; and the increased size of the distended membrane passing through it, produces to the touch, a sensation not very unlike that of an omental rupture.

While small, and affording but little inconvenience, few persons choose to submit to the operation, without which it is seldom radically cured.

cured. But when it is large, or affects the membrane within the cavity, as well as without, it becomes very inconvenient both from its size and weight; and the only method of cure which it admits, is far from being void of hazard.

Of the ENCYSTED HYDROCELE of the TUNICA COMMUNIS.

THIS species of hydrocele has its seat in the same part as the preceding, viz. the tunica communis, or cellular membrane, which invests the spermatic vessels; with this difference, that in the former the water is diffused in general through all the cells of the membrane, while in this, it is contained in one cavity only, which is formed in the same manner as the coats of all encysted tumors, by mere pressure, and condensation of the common membrane.

This is a complaint not unfrequent, especially in children; and has been accurately described by several of the ancients; though, as Mr. Pott observes, later writers have often mistaken it for a species of pneumatocele, or wind-rupture, a disease existing only in their imaginations. For the most part it occupies the middle part of the process, between the testicle and groin, and is

generally of an oblong figure. Whether large or small, it is commonly pretty tense, and consequently the fluctuation of the water within it is not always immediately or easily perceptible; on which account it has been supposed to contain only air. It gives the person no pain, and, unless very large, not much inconvenience. The swelling does not retain the impression of the fingers; and when lightly struck upon, sounds as if it contained wind only. It undergoes no alteration from the change of the patient's posture, nor is affected by coughing, sneezing, &c.

While the disease is simple, and uncombined, these marks are sufficient to distinguish it from all other disorders which may affect the same part; but it sometimes happens that this complaint is connected either with a true hernia, or with a hydrocele of the tunica vaginalis; by which the case being complicated, is less easily ascertained.

Mr. Pott justly observes, that in this, as in every other case, where from a complication of symptoms and appearances, a combination of diseases may be suspected, there is but one method of investigating the truth; which is, to consider carefully what are the several disorders to which the part is liable, what the distinct symptoms and appearances of each of those are, and what are the effects of the present complaint.

One mark, or characteristic of a hydrocele of the tunica vaginalis testis, is, that it occupies and distends the inferior part of the scrotum; and that the testicle being nearly, (though not absolutely) surrounded by the water, it very seldom happens that the former can be clearly distinguished by the fingers of an examiner, whereas in the encysted collection, in the membranes of the chord, the tumor is always above the testicle, which may be plainly felt below it.

Another circumstance worthy of attention is, that although the fluid in a hydrocele of the vaginal coat so nearly surrounds the testis, as to render it often not very easy to be distinguished, yet the different parts of the tumor have always a very different feel. For instance, in all those points where the vaginal tunic is loose, and unconnected with the tunica albuginea, the tumor is soft and compressible, and gives a clear indication of the contained fluid; but when these two coats are continuous, or make one and the same membrane, and have no intermediate cavity, (which is the case on the middle and posterior part) there will always be found a hardness and firmness, very different from what is perceived in those places where the distance between the two tunics leaves room for the collection of a fluid. Now the hydrocele of the chord being formed entirely in its cellular membrane, seems the same to the

touch in all the parts of the tumor, and feels every where like a distended bladder.

The free state, says Mr. Pott, of the upper part of the spermatic process while the tumor is forming below; the gradual accumulation of the fluid, and consequently the gradual increase of the swelling; the indolent and unaltering state of it; its being from the first incapable of reduction, or return into the belly; its being always unaffected by the patient's coughing, or sneezing; and the uninterrupted freedom of the fœcal discharge, will for ever distinguish it from an intestinal hernia; and he who mistakes it for an omental one, must be very ignorant, or very heedless.

Though there should not always be such external marks as may shew intuitively the combination of these diseases with each other, yet the particular seat and symptom of each being known, and the sensations which they produce to the fingers of an experienced practitioner being well understood, when such mixed characteristics are found in the same subject, we may reasonably conclude the case to be complex, and act accordingly. Mr. Pott indeed acknowledges, that he has seen an encysted hydrocele situated so high in the groin, as to render the perception of the spermatic vessels very obscure, or even impracticable. But the state and appearance of the
testicle,

testicle, and the absence of every symptom produced by the confinement of the intestinal canal, afforded sufficient indications of the true nature of the complaint.

Infants are much more subject to this disease than adults, though it also often affects the latter. In young children it frequently dissipates in a short time, especially if assisted by warm fomentation, and an open belly. If, however, it should not be carried off by absorption, the water may be discharged by the point of the lancet, which, in young children, will generally effect a cure. But in adults, the cyst formed by the pressure of the fluid sometimes becomes so thick, as to require division through its whole length; and this operation may commonly be performed with ease and safety. For it is no exception against the success of the operation, in general, that it has sometimes been seen to prove troublesome, hazardous, and even fatal; such being, occasionally, in particular habits, the consequence of wounds in membranous parts.

Of the HYDROCELE of the TUNICA VAGINALIS TESTIS.

THE third species of hydrocele is that which is confined to the vaginal coat, or bag which

loosely envelopes the testicle. In a natural state, this cavity contains a small quantity of a fine fluid, exhaled from capillary arteries, and constantly absorbed by vessels appointed for that purpose. The use of this fluid is to keep moist the tunica albuginea, and prevent a cohesion between it and the vaginalis. But if it be secreted in too great quantity, or the absorption of it be by any means impeded, it will distend the containing bag, and so form this species of hydrocele.

This disease is incident to persons of all ages, both children and adults; and infants are sometimes born with it. It generally advances by slow and gradual steps, but is sometimes produced very suddenly. The size and figure of the tumor are various in different persons, and under different circumstances. In the beginning, it is for the most part rather round; but, as it increases, it frequently assumes a pyramidal kind of figure, with its larger extremity downward. Sometimes it is so hard as to have been mistaken for an induration of the testicle; but in other cases, so soft and lax, that both the testicle, and the fluid surrounding it, are easily discoverable. It is in itself perfectly indolent, though sometimes its weight produces a small degree of uneasiness in the back.

Mr.

Mr. Pott observes, that the transparency of the tumor, which has been considered by almost all chirurgical writers as the great characteristic of this disease, is the most fallible and uncertain sign belonging to it. It is a circumstance which does not depend upon the quantity, colour, or consistence of the fluid constituting the tumor, so much as on the accidental thickness, or thinness of the containing bag, and of the common membranes of the scrotum.

If the integuments be thin, the fluid limpid, and the accumulation made so quickly as not to give the tunica vaginalis time to thicken much, the rays of light may be sometimes seen to pass through the tumor : but this is accidental, and not to be depended upon. The colour of the fluid is various : sometimes it is of a pale yellow ; sometimes inclined to a greenish cast ; sometimes dark, turbid, and bloody ; and sometimes it is perfectly limpid.

At the commencement of the disease, if the water be accumulated slowly, and the tunica vaginalis thin and lax, the testicle may easily be perceived : but if the tunic be firm, or the water accumulated in any considerable quantity, the testis cannot be felt at all ; and an attention to other characteristics then becomes necessary. In most cases, the spermatic vessels may be distinctly
felt

felt at their exit from the abdominal muscle, or in the groin ; a circumstance that will always distinguish this complaint from an intestinal hernia, the disease with which it is most likely to be confounded. It sometimes happens indeed, that, from a great distention of the vaginal coat, it is extremely difficult, if not impossible, to feel the spermatic process ; and it also happens, that the same kind of obscurity is occasioned, by the addition of an encysted collection of water in the membrane of the chord ; or by the case being combined with a true enterocele.

The general notion respecting this disease, is, that it is formed by a bag, filled with a fluid, in the middle of which the testicle hangs suspended. Mr. Pott however observes, that this idea is not only erroneous, and contrary to fact, but may be productive of very mischievous consequences in practice. For from such a conception of the state and disposition of the parts, says he, it may be inferred, that all points of the tumor are equally fit for such operation as may become necessary for the discharge of the fluid ; which is so far from being the case, that in some parts of the tumor, such operation is perfectly safe, easy, and harmless ; while in others, it is painful and hazardous, and may be productive of the most dreadful consequences. In one part, the tunica albuginea
and

and the vaginalis are so closely united, that it is impossible for any thing to insinuate itself between them ; while in every other part they are so absolutely unconnected, that from the great dilatibility of the vaginalis, a large quantity of fluid may be accumulated.

In a hydrocele which is tolerably full, the place of this union is the posterior and superior, or rather the posterior and middle part of the tumour. A puncture or incision made here can answer no intention, but must injure the testicle, or its epididymis, and thereby produce great mischief ; when an opening made in any other part will not only give vent to the water, but is free from all kind of danger.

Mr. Pott observes, that this natural connection between the two tunics, at the upper and hinder part, is the reason why, in a simple hydrocele, that part of the tumor feels so very unlike to every other. The tunica albuginea and vaginalis being there immediately continuous, no water can get between them ; and therefore an intelligent examiner must immediately discover the firmness and hardness, arising from the union of these parts. In all others, the two membranes being unconnected, and affording a void space for the collection of water, the fluctuation of it will always be distinguishable.

This

This circumstance, Mr. Pott farther observes, must for ever discriminate the simple hydrocele, of the tunica vaginalis, from the anasarcaous swelling of the scrotum; from the encysted hydrocele of the chord; and from the intestinal hernia. The first is every where tumid and soft; and every where equally receives, and retains, the impression of the fingers. The second, though circumscribed, not very compressible, and affording the sensation of a moving fluid, yet does not pit; and is alike to the touch in all parts. In the third, if the testicle be at all distinguishable, it is found at the inferior part of the tumor.

It is remarked by the same author, that an indurated, or scirrhus testicle has indeed often a quantity of fluid lodged in its vaginal coat, occasioned by the diseased state of the gland preventing the natural absorption. But this is a very different disease from the true simple hydrocele. The marks of the latter are the natural, soft, healthy state of the testicle; and of the former, its diseased, and indurated enlargement. It is not meant by this description, that the testicle, in a true simple hydrocele, is never altered from its natural state. On the contrary, it is very often not only enlarged, but relaxed in structure, and its spermatic vessels are frequently varicous.

The two principal complaints liable to be mistaken for a hydrocele, are, that kind of scirrhus testicle in which an extravasation of fluid is made in the tunica vaginalis ; and the venereal induration of the testicle, attended with the same circumstance. But in neither of these can the mere discharge of the fluid contribute any thing material towards a cure ; and in both of them, such an attempt, injudiciously made, has often proved both painful and hazardous.

The method of cure in this species of hydrocele, is either palliative or radical. The former consists in discharging the fluid only ; and the latter in abolishing the cavity of the bag, that no receptacle may be left for a future accumulation of water.

The instruments in use for performing the operation, are, the common bleeding lancet, and the trochar. The former, having the finer point, may perhaps enter with rather more facility, (though the difference is hardly perceptible) but, in Mr. Pott's opinion, it is liable to inconveniences to which the latter is not. The trochar, he observes, by means of its canula, secures the exit of the whole fluid without a possibility of prevention ; the lancet cannot. It therefore frequently happens, when this instrument is used, either that some of the water is left behind, or
that

that some degree of handling and squeezing is required for its expulsion, or that the introduction of a probe, or a director, or some such instrument, becomes necessary for the same purpose. The probe, Mr. Pott observes, may in some habits be productive of inflammatory symptoms; while the director prolongs an operation that would otherwise be short, and multiplies instruments unnecessarily, which ought always to be avoided. The proper place for the puncture is that part of the tumor where the two coats are at the greatest distance from each other, and where the fluid must therefore be accumulated in the largest quantity.

It was formerly the custom, after performing the operation, to make use of fomentations, and discutient applications, upon a supposition that by such means a return of the disease might be prevented. But such applications are now deservedly exploded, and practitioners content themselves with a bit of lint, and a plaster; suspending the scrotum, if it has been considerably distended, in a bag truss; and giving the patient no farther trouble.

In most people, the orifice thus made heals in a few hours, but in some habits and circumstances it inflames and festers. This festering is generally superficial, and is soon quieted by any
simple

simple dressing. Sometimes, however, it is so considerable, and extends so deep, as to affect the vaginal coat, and by accident produce a radical cure. But it has been likewise seen to prove yet more troublesome, and even fatal.

Several writers have forbid the puncture in an adult, while the quantity of water may be supposed to be under a pint; and this restriction is still scrupulously observed by many practitioners. But Mr. Pott remarks, that when there is a sufficient quantity of fluid to keep the testicle from the instrument, there can be no reason for deferring the discharge. The single point on which the argument ought to rest, he adds, is this: Whether the absorbent vessels, by which the extravasation should be prevented, are more likely to re-assume their office, while the vaginal coat is thin, and has suffered but little violence from distension, or after it has been distended to ten or perhaps twenty times its natural capacity; and by such distension, is, like all other membranes, become thick, hard, and tough. He thinks the probability so much on the side of the former, that he should never hesitate a moment about letting out the water, as soon as he found that the puncture could be made securely. And from what has happened within his own experience, he is inclined to believe, that if it was performed

more early than it generally is, it might sometimes prevent the return of the disease.

The means formerly used for a radical cure, were cauterly, caustic, ligature, and tent; all which, as Mr. Pott observes, were put in practice for three general reasons, or under the influence of three general opinions. The first of these was, that the fluid found in the sac of a hydrocele was always originally formed in the cavity of the belly, whence it descended into the scrotum: the second, that it was a disease of the habit, as well as of the particular part; or general, as well as local; and the third, that the collection of liquor found in it, was either the necessary cause, or the consequence, of a diseased state of the testis. These erroneous opinions, however, were not the most pernicious that were entertained on this subject by former writers. They supposed that the fluid contained in the cyst was thrown off from the habit as a kind of crisis; that the general constitution of the patient was by such deposition much relieved; that it prevented many other, and worse disorders; and either that a morbid state of the testicle and epididymis concurred in producing the fluid, or that these parts necessarily became diseased by being immersed in it.

Such

Such were the opinions formerly entertained on this subject, but more accurate investigation has afforded a juster idea of the disease; and the ancient methods of cure, if not totally exploded, are now used upon different principles, and with different views.

Mr. Pott informs us, that he has tried every practicable method proposed by the ancients, and has found them in general painful, fatiguing, hazardous, or inefficacious.

The tent, whether of lint or sponge, is liable to great objections, both in its first application, and its future necessary continuance. The cellular structure of the dartos, and the loose connection between the skin and tunica vaginalis, render its introduction (unless a canula be used) sometimes difficult. After it is applied, great care must be taken to keep it upon the place for some time, otherwise the effect intended (an inflammation of the vaginal coat and albuginea) cannot be obtained; and the means used for its distension, as well as the nature of the tent itself (especially if made of sponge) prove often very fatiguing, not to say mischievous, by the irritation, and the necessary confinement of the matter. It frequently likewise produces only a partial cohesion, so small as not to effect a cure, nor pre-

vent the future accumulation of water, or the necessity of repeated tapping.

The canula, when used for the same purpose, instead of a tent, is indeed easily introduced, and when in, does not confine the matter; but its hardness, inflexibility, and thin edge, with the absolute impossibility of managing or directing it, in the frequent and necessary motions of the patient, though confined to his bed, render it very unpleasant and troublesome within the tunica vaginalis; and if, to avoid this inconvenience, a piece of bougie be kept within it, this, while it remains, confines what ought to be discharged.

The object in view is to excite such a degree of inflammation, both in the tunica vaginalis, and tunica albuginea, as shall occasion a general and perfect cohesion between them; and this, if possible, without the production of a slough or abscess, without the hazard of gangrene, and without that degree of symptomatic fever which now and then attends both the caustic and the incision, and which, when it does happen, is so alarming both to patient and surgeon.

These ends, Mr. Pott informs us, he has frequently obtained by a seton; a method of cure formerly in use with Guido, and others, but by a process somewhat different. Mr.

Pott

Pott has several times tried it on subjects of very different ages, some of them upwards of fifty years old. It requires confinement to bed only for a few days; after which the patient may lie on a couch to the end of the attendance, which is generally finished in about three weeks or a month at farthest. During all this time, no other process or regimen is necessary, than what an inflammation of the same part, from any other cause would require.

The manner of performing this method of cure is thus directed by Mr. Pott.

Choose a time when the vaginal coat is moderately distended; and having pierced it with a trochar of a tolerable size, draw off the water. This being done, introduce into the canula, a probe armed with a seton, consisting of ten or twelve strings of candlewick cotton. Pass the probe as high to the upper part of the vaginal coat as you can; and on the end of it make an incision of such size, as to enable you to pull it out easily, with a part of its annexed seton. Then cut the latter off the probe, and tie the cotton very loosely, covering the orifices with pledgets. By the next day, the seton will be found to have contracted such an adhesion to the tunica albuginea, as would cause a great deal of pains to detach it; but this it is perfectly unnecessary to

do, as it should be suffered to remain without molestation. In about forty-eight hours, the scrotum and testicle begin to swell and inflame: the patient should then lose some blood, and have a stool or two; and the whole tumified part should be wrapped in a soft poultice, and suspended in a bag-truss. The disease from this time bears the appearance of a large hernia humoralis, and must be treated in the same manner, by fomentation, cataplasm, &c.

The adhesion of the seton to the albuginea generally continues firm; and Mr. Pott never meddles with, or offers to move it, until it becomes perfectly loose, which it seldom does for the first fortnight, or until the inflammation is disappearing, and the tumor subsiding. By the time the seton becomes loose of itself, the coalition of parts is firmly and universally accomplished. He then withdraws it, and heals the orifices with a superficial pledget.

This method, Mr. Pott informs us, he has several times successfully practised on subjects, on whom he would not by any means have attempted either the use of the caustic, or have performed the operation of incision. He will not affirm, that he has never seen any ill consequences attend it; but they have been very few; and he thinks it so much preferable to all the other less perfect methods,

methods, that he shall not, (unless something new occurs, which may induce him to alter his opinion) hesitate to practise it whenever a radical cure is desired, and the incision is either refused, or thought improper.

Since Mr. Pott first recommended the above method of cure, repeated trials have furnished him with objections to some parts of it, and induced him to think that it might be rendered more perfect. He has found that cutting upon the end of the probe, both from its smallness and flexibility, was troublesome; that, for the same reasons, it was somewhat difficult to keep it steady; and that it always required the assistance of another person's hand besides that of the operator, a circumstance one would always wish, if possible, to avoid. He also sometimes found, that the seton of candlewick cotton, did not pass so easily as he could wish, and by rubbing the tunica albuginea too rudely, excited more pain than was proper; as made of cotton, it adhered in some instances too long and too firmly. From the intimate connection of the parts of the wet cotton with each other, it could never be brought away but entire, which in some cases occasioned an unnecessary waste of time. And what was yet worse, in two instances it ad-

hered so firmly, that he was obliged to make a small incision in order to remove it.

All these inconveniences Mr. Pott has now obviated. The instruments he uses are a trochar, with a diameter very nearly, but not quite, one fourth of an inch; and another canula, called the seton canula, made of silver, and which is of such diameter as just to pass easily through the canula of the trochar. Its length is five inches, with a probe of six inches and a half long, having at one extremity a fine steel trochar point, and at the other an eye which carries the seton. The seton consists of just so much strong, coarse, white sewing silk as will without difficulty pass through the latter canula, but at the same time will fill it.

With the trochar the inferior and anterior part of the tumor is to be pierced, as in common palliative tapping. As soon as the water is discharged, and the perforator withdrawn, the seton-canula is to be passed through that of the trochar, until it reaches the upper part of the tunica vaginalis, and is to be felt in the very upper part of the scrotum. This being done, the probe, armed with its seton, is to be conveyed through the latter canula, the vaginal coat and integuments to be pierced by its point, and the seton to be drawn through the canula, until a sufficient quantity

tity is brought out by the upper orifice. The two canula's are then to be withdrawn, and the operation is completed. It is performed in two or three seconds of time, and with little more pain than is felt in common tapping.

The seton-canula by its firmness bears tight against the place where the seton should be brought out: the trochar-point of the probe is kept from deviating by its confinement; and its point pierces through the skin exactly in the part intended; while the seton, by passing through the canula, is prevented from rubbing rudely over the testicle.

As soon as the operation is finished, Mr. Pott orders the patient to be put to bed, and immediately gives him twenty or twenty-five drops of *tinctura thebaica*, which is repeated, or not, as circumstances require.

About the third day the testicle and scrotum begin to inflame and swell, and to assume the appearance of a *hernia humoralis*, or the swelled testicle which sometimes attends a clap; requiring exactly the same treatment, viz. fomentation, poultice, a suspensory bag, a cool temperate regimen, and an open belly. When the inflammation is appeased, Mr. Pott permits the patient to get out of bed and lie on a couch, or sit in a great chair with his legs raised; and he

generally gives the cortex in some form or other twice or thrice a day.

The foreness and tumefaction diminish apace, and as soon as the parts are quite easy, which is generally about the tenth or twelfth day, Mr. Pott begins to withdraw the seton, taking out four, five, six, or seven threads of it at each dressing, which consists of nothing more than a superficial pledget upon each of the orifices while they continue open, with a discutient cerate (such as the *ceratum saturnin.*) to cover the scrotum.

The discharge of matter from the orifices is small and trifling, no more than might be expected; the tunica vaginalis does not become sloughy, but is preserved entire, and the cure is accomplished merely by the coalescence or cohesion of the tunica vaginalis with the tunica albuginea; an event which Mr. Pott is inclined to believe, is most frequently the consequence of a severe hernia humoralis.

While Mr. Pott so warmly recommends the use of the seton in the hydrocele, the method of curing it by caustic has met with a no less strenuous advocate in Mr. Lise. But admitting that both these methods may prove equally successful in the radical cure of the complaint, the former, upon a comparative view, appears to be preferable. It neither produces any slough, at least so far

as Mr. Pott has observed, nor destroys any part of the vaginal coat ; but prevents a relapse of the disease, by producing a cohesion between the two membranes. The latter, on the contrary, produces a slough of the whole tunica vaginalis, which, in order to effect a cure, it completely destroys.

Hardly any part of surgery has been of late years more successfully improved than the practice respecting the hydrocele. Even the nature and seat of the disease seem not to have been known to former writers, who have therefore involved the subject in great perplexity. But the disease being now fully investigated, the indications of cure are founded upon rational principles, and the only dispute remaining, is, by which of the abovementioned methods those may be most happily accomplished.

Of the S A R C O C E L E.

T H E sarcocoele, or hernia carnosæ, is another disorder of the testicle, not only ill described by former writers, but absolutely misunderstood, until it was placed in a clearer light by Mr. Sharp,

The

The farcocele is said to be either a tumor of the testicle itself, or one growing upon it. The former answers to what we now call a scirrhus testicle : but the latter is a mistaken case ; that which chirurgical writers have supposed to be an adventitious swelling, or excrescence, being really an enlargement and induration of the epididymis. By confounding the nature of these two species of farcocele, and supposing them equally malignant, the old surgeons were frequently led into not only a needless but a fatal severity in their practice. The scirrhus which attacks the body of the testicle, is usually of a cancerous disposition ; whilst that which falls on the epididymis only, is seldom or never so. Indurations of the epididymis may resist all the methods of discussion, and remain scirrhus, or perhaps suppurate ; but they will never become cancerous, while the glandular part of the testicle is sound, and therefore will not require extirpation, as, upon that presumption, is generally recommended. On this account they ought always to be treated with patience ; for in length of time the most stubborn is often subdued, and not only health and life less hazarded, but also the faculties of the organ preserved.

It must not, however, be understood, that a scirrhus of the epididymis cannot possibly dege-

nerate into a cancer, since no part of the body is absolutely exempt from this consequence. Indeed, cancers of the epididymis are usually attendant on cancers of the testicle ; but in this case, it is to be remarked, that the poison is spread by infection, and not derived from the natural tendency of scirrhi of that part.

The most considerable improvement made by the moderns in this article, is the preference given to the knife, over the caustic or cautery, as advised and practised by old surgeons.

It is a subject worthy attention, to enquire in what circumstance of a scirrhus, the operation will be advisable ; for it is not always a sufficient reason that the tumor has resisted every other means of relief, though this be the general rule laid down by most writers. Some scirrhi remain in an indolent state for many years, neither increasing in bulk, nor producing any disorder : there are even some instances of their having in time subsided.

Mr. Sharp is of opinion, that a scirrhus in such a state ought to be left till an alteration of circumstances calls for our assistance. He is aware it will be suggested, that the most proper time for the extirpation, is when the tumor is small, the distemper (as they suppose) not deeply rooted
in

in the blood, and when the strength of the patient is not impaired by the force of the disease. But this reasoning, he observes, however specious, is not conclusive. Experience shews that the operation under all these circumstances will often prove fatal. Sometimes, after the operation, the wound itself becomes cancerous, and sometimes the cancerous poison falls on another part of the body ; in both which cases the patient is often carried off with great rapidity. But though the operation is not hastily to be undertaken in every state of a scirrhus, yet in some instances, it not only affords immediate deliverance from death, but proves a radical cure. In short, no scirrhus is so trivial, but that the operation may have a fatal consequence, and no cancer so malignant but the event may prove successful ; on which account, castration is neither to be recommended without an urgent motive, nor absolutely to be despaired of, though in the last extremity of the disease.

That the operation should so often be pernicious in a gentle degree of the scirrhus, and yet sometimes be salutary in its greatest malignity, Mr. Sharp observes, are maxims which may appear a little contradictory ; but he thinks he can say from experience, it is a fact, and that relapses after the operation arise from causes so much
above

above our knowledge, that we have no exact criterion to direct us in our prognostics. He does not affirm that a mild scirrhus is altogether so liable to return as a cancer: but still he thinks, whilst it gives no trouble, either by its painfulness or weight, the extirpation should be postponed; because the advantages we have from these circumstances do not compensate the risque incurred by the operation.

It may be objected to this practice, that whilst we are waiting till the operation becomes absolutely necessary, the disorder of the testis may creep into the spermatic chord, which when once infected, renders the operation extremely dangerous, and indeed quite desperate, if the induration be within the abdominal rings. This accident is possible, but seldom likely to happen under the inspection of a discerning practitioner. For the chord will hardly ever be affected by a propagation of the humour, till the testicle be in a state of increase, which is not the circumstance that we have supposed.

It is a prevailing opinion, that the long continuance of a scirrhus is apt to taint the whole mass of blood, and to render the operation fruitless. This notion has induced surgeons to recommend an early extirpation; but Mr. Sharp imagines that the principle on which they build
is

is erroneous; and that whoever will make an enquiry into the histories of cancers cured without relapses, will find a greater proportion amongst such as were of many years standing, than amongst those that became subjects of the operation very soon after their appearance. If this observation be true, it proves, at least, that the danger which may arise from the mere residence of a scirrhus for a length of time, is not of itself a sufficient motive for castration.

Another objection against waiting till the testicle shall have acquired more bulk, is the greater difficulty of performing the operation; and also the greater danger resulting from it. But this objection, on being maturely considered; will not seem to carry with it much force. It is peculiar to the amputation of this part, that the wound does not bear a proportion to the size of the extirpated tumor. The wound made for extraction of a testicle weighing a pound, is, or ought to be, nearly as large as that made for the extraction of a testicle of three pounds; on which account, we seldom see worse symptoms after the extirpation of a very large testicle, than of one of a moderate size. But, what deserves our attention more, Mr. Sharp adds, that few or none die of the operation, if not attacked again by the cancerous poison; which remark, if just, shews that

that the enlargement of the testicle does not endanger life, merely as it regards the operation.

Mr. Sharp observes, that the manner in which this operation is described by the best writers, is exceptionable in several particulars. They almost all of them agree, that the skin should be pinched up transversely in the groin by an assistant, in order to make the incision either with the knife or scissars, down to the spermatic chord. When the chord is laid bare, they separate the skin, by tearing it with the fingers, or by introducing a director to cut upon, or else by a pair of probe-scissars; all which precautions seem to arise from an ill-grounded fear of wounding the spermatic vessels, or some large artery. An incision should be made boldly at once through the skin, and membrana cellularis, down to the tunica vaginalis; in doing which, there is not the smallest danger nor loss of time, and one might almost say, not the least pain, when compared to the other method of cutting, either by the director or the scissars.

Mr. Sharp farther observes, that the next process in this operation, after laying the chord bare is, as they describe it, extremely indelicate; he means the tearing away the testicle from the membrana cellularis, and snipping or cutting the membrane wherever there is a resistance.

The

The following is what Mr. Sharp apprehends to be the best method of performing this operation.

Make an oval incision, which shall begin a little above the rings of the abdominal muscles, and extend almost to the bottom of the scrotum; the breadth of the oval in its widest part being at least one half of the smaller circumference of the testicle. When the incision is made, and the vessels of the scrotum are tied (if any remarkable hæmorrhage ensues) the skin is to be dissected away from the chord, to make room for the ligature or ligatures of the spermatic vessels; after which the chord is to be divided, and the testicle, with the oval piece of skin on it, is to be dissected out of the scrotum. This process of the operation is much facilitated by dividing the chord; for, by grasping the upper part of the testicle in your left-hand, it turns out much more readily than when it remains suspended, and you can only separate it on each side.

It has been observed, that the oval incision is not to be carried quite to the bottom of the testicle, that the time and pain of the operation may be diminished; because, as but little skin is to be preserved, it will be a shorter, and an easier way, to cut out the testicle with a portion of skin on it in the lower part, than to dissect it

out

out first, and afterwards take off the superfluous skin. Therefore, when the testicle is cleared away from the scrotum, the whole length of the oval incision, the operation may be finished by cutting away the testicle and skin at the same time. But what is here said must be understood of the extirpation of a large testicle.

By taking away so much of the scrotum with the testicle, as is here recommended, you leave only a small portion of it behind, and consequently a small wound. But it has been hinted above, that it is always in our power to carry off such a quantity of the scrotum, that the wound shall be small, however large the tumor itself.

This is a short view of the operation which Mr. Sharp would recommend. But the method prescribed by the moderns is, to make only a longitudinal incision to the bottom of the scrotum, and then to tear out the testicle from it. Mr. Sharp however observes, that the tearing such a quantity of skin, as envelopes a testicle of two or three pounds weight, is not only painful in performing, but the violence used may probably be dangerous in its consequence. Besides, in this case, we are afterwards obliged to cut away as much of the loose scrotum, as we shall judge necessary for the better healing of the wound, which is likewise another painful process.

Mr. Sharp farther observes, that another circumstance considered in this operation, is the danger of a hæmorrhage from the spermatic artery; but this seems to arise from a fear of employing the necessary means to prevent it. Some surgeons of eminence believe, that by tying the spermatic chord we hazard a convulsion; to avoid which, the use of styptics and compress is recommended. Or, if we be compelled to the ligature, we are ordered to separate the nerve from the spermatic vessels before we tie them. But this prescription, Mr. Sharp remarks, is no better founded in anatomy than experience. For were it true that the ligature of the nerve would bring on convulsions, in this case it is so small, and twists in such a manner round the vessels, that the separation of it is impracticable.

This strange apprehension of ill consequences from tying the chord, has so far misguided men of the greatest eminence, that it has been even proposed as a security against the hæmorrhage, to separate the testicle from the scrotum, and after tying the chord, to leave it there till it drops off by putrefaction. This modern refinement seems to be approved even by Heister. The same apprehension has induced Le Dran to recommend the bruising of the spermatic vessels, by rubbing them between the finger and thumb, so that when the chord is cut, they should not
yield

yield any blood. Mr. Sharp is of opinion that this practice may be hurtful in some degree.

In respect of tying the spermatic chord, Mr. Sharp informs us, that in some few cases, he has met with such an elasticity of the coat surrounding the vessels, that the knot of the ligature has yielded to its dilatation, and a fresh hæmorrhage has ensued. In such a case it is advisable to carry the needle with a double ligature through the middle of the chord, and tie it both above and underneath the chord, which will be a sufficient security.

The only remaining article of improvement on this subject worth observing, as a means of speedier cure, is, to pass a needle and ligature from the skin at the lower part of the wound, through the skin on the opposite side, in such manner as to envelope in some degree the sound testicle; or, if one stitch will not answer the purpose, to repeat it once or twice, in such part of the wound as shall be most convenient.

Of the C A N C E R of the S C R O T U M.

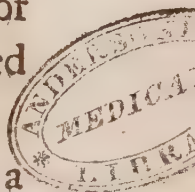
MR. Pott is, I believe, the only author that has publicly noticed this disease, which appears to be peculiar to chimney-sweepers, and

is by them called the foot-wart. He informs us, that it always makes its first attack in the inferior part of the scrotum, where it produces a superficial, painful, ragged, ill-looking sore, with hard and rising edges. He never saw it under the age of puberty, which is, he supposes, one reason why it is generally taken, both by patient and surgeon, for venereal, and being treated with mercurials, is thereby much exasperated. In no great length of time, it pervades the skin, dartos, and membranes of the scrotum, seizing also the testicle, which it enlarges and hardens. Thence the disorder proceeds up the spermatic process into the abdomen, most frequently indurating the inguinal glands. When arrived within the abdomen, it affects some of the viscera, and very soon afterwards becomes destructive.

Mr. Pott observes, that if there be any chance of putting a stop to, or preventing this mischief, it must be by the immediate removal of the part affected, viz. the part of the scrotum where the sore is. For if it be suffered to remain until the virus has seized the testicle, it is generally too late even for castration. Mr. Pott has many times made the experiment; but though the sores, after such operation, have in some instances healed kindly, and the patients have left the hospital seemingly well, yet, in the space of a few

few months, it has generally happened, that they have either the same disease in the other testicle, or in the glands of the groin, or such wan complexions, such a total loss of strength, and such frequent and acute internal pains, as have sufficiently proved a diseased state of some of the viscera, and which have soon been followed by a painful death.

If extirpation ever bids fair for the cure of a cancer, Mr. Pott remarks that it seems to be in this case; but the operation should be immediate, and before the habit is tainted. The disease in these people appears to derive its origin from a lodgment of soot in the rugæ of the scrotum, and at first not to be a disease of the habit. In other cases of a cancerous nature, in which the habit is too frequently concerned, we have not often so fair a prospect of success by the removal of the distempered part, and are obliged to be content with means which at best are only palliative: but here the subjects are young, and in general in good health; the disease brought on them by their occupation, and in all probability local; which last circumstance may be fairly presumed from its seizing always the same part. These various circumstances, Mr. Pott observes, render it at first a very different case from a cancer which appears in an elderly man, whose fluids



are become acrimonious from time, as well as other causes; or from the same kind of complaint in women who have ceased to menstruate. But, our author adds, be all this as it may, the scrotum is no vital organ, nor can the loss of a part of it ever be attended with any, the smallest degree of inconvenience; and if a life can be preserved by the removal of all that portion that is distempered, it will be a very good and easy composition. For when the disease is a little advanced, it is rapid in its progress, painful in all its attacks, and most certainly destructive in its event.

Of the FISTULA in ANO.

MR. Pott, to whom surgery is so much indebted, has made great improvement in the treatment of this disease, and to his valuable observations, therefore, we shall have recourse in the prosecution of the subject.

It is our author's first remark, that the custom of giving the appellation of Fistula to every imposthumation, and to every collection of matter formed near to the anus, has, by conveying a

false notion of them, been productive of such methods of treating them, as are diametrically opposite to those which ought to be pursued; and such as have often rendered those cases tedious and painful, which might have been cured easily and expeditiously.

A small orifice or outlet from a large or deep cavity discharging a thin gleet, or sanies, made a considerable part of the idea which surgeons formerly had of a fistulous sore, wherever seated. With the term fistulous they always connected a notion of callosity; and therefore applied the name of fistula to any local complaint where they found such a kind of opening, yielding such sort of discharge, and attended with any degree of hardness. Imagining this callosity to be a diseased alteration made in the very structure of the parts, they thought the only means of cure consisted in removing it with a cutting instrument, or destroying it with escharotics.

Several of the abovementioned circumstances frequently attend collections of matter near the rectum; and therefore, for want of proper attention to the true nature of the case, the custom of calling them all fistulæ has generally prevailed, though without any foundation in truth. That abscesses formed near the fundament do sometimes, from bad habits, from extreme neg-

lect, or from gross mistreatment, become fistulous, is certain : but the greater part of them has not at first any characteristic of a true fistula ; nor can, without a total neglect on the side of the patient, or the greatest mismanagement on the part of the surgeon, degenerate into one.

This disorder makes its appearance under a variety of forms. Sometimes it attacks with symptoms of high inflammation, and the abscess becomes truly critical, or becomes a solution of the fever. In this case a part of the buttock near the anus is considerably swollen, and has a large circumscribed hardness, the middle of which, in a short time, becomes red and inflamed ; and afterwards suppurates. The pain is sometimes great ; the fever high ; the tumor large, and exquisitely tender : but however disagreeable the appearances may have been, or however high the symptoms may have risen, before suppuration ; yet, when that end is accomplished, the patient generally becomes easy and cool ; and the matter formed under such circumstances, though it may be plentiful, is good.

On the other hand, the external parts, after much pain, attended with fever, sickness, &c. are sometimes attacked with considerable inflammation,

mation, but without any of that circumscribed hardness abovementioned: instead of which the inflammation spreads wide, and the skin wears an erysipelatous kind of appearance. In this the disease is more superficial, the quantity of matter small, and the cellular membrane sloughy to a considerable extent.

Sometimes, instead of either of the preceding appearances, there is formed in this part, what the French call *une suppuration gangreneuse*; in which the cellular and adipose membrane is affected in the same manner as it is in the disease called a Carbuncle. In this case the skin is of a dusky red, or purple kind of colour; and though harder than in a natural state, yet has not that degree of tension or resistance, which it has either in the phlegmon or the erysipelas.

The patient has generally, at first, a hard, full, jarring pulse, with great thirst, and very fatiguing restlessness. If the progress of the disease be not stopped, or the patient relieved by medicine, the pulse soon changes into an unequal, low, faltering state; and the strength and spirits greatly decline. The matter formed under the skin so altered, is small in quantity, and bad in quality; and the adipose membrane is gangrenous, and sloughy throughout the extent of the discoloration. This generally happens

pens to persons whose habit is either naturally bad, or rendered so by intemperance.

In each of these affections, the malady is often confined to the skin, and cellular membrane underneath it; and no other symptoms attend than such as are common, or such as arise from the formation of matter or sloughs in the part immediately affected. But it also often happens, that besides these the patient is troubled with complaints arising from an influence, which the original disorder has on the neighbouring parts; such as the urinary bladder, the vagina, the urethra, the hæmorrhoidal vessels, and the rectum, producing retention of urine, stranguary, dysfury, tenesmus, piles, diarrhœa, or obstinate costiveness; which complaints are sometimes so pressing, as to claim all our attention. On the other hand, large quantities of matter, and deep sloughs are sometimes formed, and great devastation committed on the parts about the rectum, with little or no previous pain, tumor, or inflammation.

Sometimes the disease makes its first appearance in an induration of the skin, near the verge of the anus; but without pain or alteration of colour. This hardness gradually softens and suppurates: the matter, when let out in this case, is small in quantity, but good in quality; and

and the fore is superficial, clean, and well conditioned. On the contrary, it now and then happens, that though the pain be but little, and the inflammation apparently slight, yet the matter is in large quantity, of a bad kind, extremely offensive, and proceeds from a deep, crude, cavity, which bears an unpromising aspect.

The place also where the abscess points, and where the matter, if not artificially evacuated, would discharge itself, is various and uncertain. Sometimes it is in the buttock, at a distance from the anus; at other times near its verge, or in the perineum; and the discharge is sometimes made from one orifice only, sometimes from several. In some cases, there is not only an opening through the skin externally, but another through the intestine into its cavity: in others, there is only one orifice, and that either external or internal.

Sometimes the matter is formed at a considerable distance from the rectum, which is not even laid bare by it; at others, it is laid bare only, and not perforated. It is also sometimes not only denuded, but pierced; and that in more places than one. The original seat of the complaint is, in some cases, high up in the pelvis, near the lower vertebræ of the loins, and the os sacrum; and the matter comes from parts so diseased,

diseased, and so out of reach, that the case is hopeless from the beginning. To some persons these discharges are salutary, and prove solutions of general diseases, which have long infested the habit; but to others they often prove fatal, by exhausting the strength. If the disease proceeded originally from the lues venerea (which is not an uncommon case) it frequently communicates with the urethra, and neck of the bladder, producing great misery to the patient: and sometimes it happens, that fistulous openings near the anus discharge a sanies, which is occasioned by a cancerous state of some of the parts within the pelvis.

From so great a variety of circumstances attending the disease, it is evident that no one particular method can be suitable in all; but that in this, as in many other cases, the treatment must be occasionally varied, and adapted to the exigences of the case.

When inflammatory defluxions are made on the cellular membrane surrounding the rectum, it is seldom in our power to prevent the formation of matter; nor if it was, would the practice be advisable, as these abscesses mostly happen in constitutions where they afford, at least, a temporary relief. The business of the surgeon, therefore, when called at the beginning, must be

to

to moderate the symptoms ; to forward the sup-
puration ; when the matter is formed, to dis-
charge it ; and to treat the fore in such a manner
as shall be most likely to affect a speedy and ra-
dical cure.

When there are no symptoms which require
particular attention, and the only object in view
is to assist the maturation of the tumor, a soft
poultice is the best application. When the
disease is clearly of the nature of a phlegmon,
the thinner the skin is suffered to become, be-
fore the abscess be opened, it is so much the bet-
ter, as the induration of the contiguous parts
will be thereby more dissolved, and conse-
quently, the less will remain to be done after
the opening is made. This kind of tumor is
generally found in persons of full sanguine ha-
bits ; and who, therefore, if the symptoms be
violent, will bear evacuation, both by bleeding
and gentle cathartics. This, however, is not
often the case of those of bilious constitutions, in
whom the inflammation is of larger extent, and
the skin of the part affected wears the yellowish
tint of the erysipelas ; persons of such a kind of
habit, and in such circumstances, being in general
seldom capable of bearing large evacuation.

When instead of either the preceding appear-
ances, the skin wears a dusky, purplish colour,
has

has a doughy unresisting kind of feel, and is very little sensible, with an unequal, faltering pulse, irregular shiverings, a great dejection of spirits, and an inclination to dose, the case is formidable, and the event gradually fatal.

In such circumstances, where the habit is always bad, and there is no need of evacuation, the patient, without the speediest assistance, must sink under the disease. Hot spiritous and antiseptic fomentations should be frequently applied to the part, in which also large and deep incisions must be made.

Strangury, dysury, and even total retention of urine, are no very uncommon attendants upon abscesses forming in the neighbourhood of the rectum and bladder; especially if the seat of them be near the neck of the latter. These symptoms sometimes continue from the first attack of the inflammation, until the matter is formed, and has made its way outward; but sometimes they last only a few hours.

The strangury, and dysury are generally relieved by bleeding, and the use of gum arabic, with nitre, &c. But the total retention of urine is extremely alarming. Mr. Pott observes, that they who have not often seen this case, have commonly immediate recourse to the catheter; but he affirms that the practice is essentially wrong,

wrong, and that he has seen the most terrible consequences flow from it. Nor indeed can we wonder at such effects, when the connection of the parts is considered. The neck of the bladder, from its vicinity to the seat of the inflammation, and from its being involved in the same common membrane, does certainly participate, in some degree, of the affection last mentioned. Add to which, that the difficulty of urine, in this case, appears to be chiefly a spasmodic complaint, and to proceed from an extremely irritable state of the urethra. Mr. Pott observes, that the manner in which those disorders generally occur; the very little distention which the bladder often suffers; the small quantity of urine sometimes contained in it, even when the symptoms are most pressing; and the most certain, as well as safe, method of relieving them, all tend to confirm such an opinion.

The method recommended by Mr. Pott, and that which affords the most reasonable prospect of relieving the strangury, is by evacuation and anodyne relaxation; which not only procure immediate ease, but promote the maturation of the abscess. Bleeding is necessary; and the quantity must be determined by the strength and state of the patient. The intestines should also be emptied by a gentle cathartic, if there be
time

time for so doing ; but the most effectual relief will be from the warm bath, or semicupium, the application of bladders with hot water to the pubes and perineum ; and, above all other remedies, the injection of clysters, consisting of warm water, oil, and opium.

It is observed that a painful tenesmus is no uncommon attendant upon an inflammatory defluxion on the parts about the rectum. If a dose of rhubarb, joined with a warm anodyne, does not relieve it, the injection of thin starch and opium, or tinctura thebaica, is almost infallible.

In some habits, an obstinate costiveness attends this kind of inflammation, accompanied, not unfrequently, with a painful distension, and enlargement of the hæmorrhoidal vessels, both internally and externally. Here likewise phlebotomy, laxative clysters, and a low, cool regimen must be used ; while the application of a soft cataplasim serves to relax and mollify the swollen, indurated piles, at the same time that it forwards the suppuration.

When the suppuration is completed, and the matter discharged, either by an accidental or artificial outlet, the disease assumes a new form, and must be treated in a different manner, according

according to the circumstances with which it may be accompanied. Mr. Pott distinguishes those circumstances under two heads ; which are, when the intestine is not affected, and when it is either laid bare, or perforated.

Let us first suppose the matter to be fairly formed ; to have made its point, as it is called ; and to be fit for discharge.

Where such point is, that is, where the skin is most thin, and the fluctuation most palpable, there unquestionably the opening ought to be made.

Mr. Pott observes, that some of our predecessors, either from a fear, which naturally accompanies the want of anatomical knowledge, or from an awkwardness in using a cutting instrument, adopted the method of opening these, as well as most other abscesses, by caustic. But with all due deference to authority, he affirms that such practice is in general wrong ; and particularly so in the present case. It often gives unnecessary pain, and occasions a loss of substance, with a kind of cicatrix, which is not only unseemly, but often proves a lasting inconvenience.

Some of the patrons of potential fire, continues Mr. Pott, do, indeed, give a specious kind of reason for its use ; viz. that it makes a

more large and free opening for the discharge; and that, by the time the eschar is separated, the hollow underneath is generally more than half filled up. He admits that in few, very few, particular cases, where the destruction of the glandular parts may become necessary, after the eschar is thrown off, (as in venereal buboes) there may be some force in this argument, and caustics may be found useful; but in the present case, and in most others, in which they are freely and frequently applied, they appear to be highly improper; as they necessarily occasion a loss of substance, and a kind of eschar; which is, in general, an indelible blemish. And in respect of the particular circumstance of the hollow being filled up, by the time the eschar is separated, if the surgeon will dress an abscess, opened by incision, in the same easy, superficial manner, as he does one opened by caustic, he will find the consequence to be the same. But Mr. Pott observes, for what reason he knows not, a notion has long prevailed, that an abscess opened by a knife must be immediately crammed, and stuffed with dressings, while that, on which a caustic has been applied, must be let alone, until the eschar casts off. Let the one, says he, be treated as the other is, and as they both ought to be, and the event will be found to be alike in each; with
this

this material difference in favour of the knife, that it will not necessarily occasion any loss of substance, nor any deformity which is at all comparable with what must follow the use of the caustic.

In making the opening, the knife, or lancet should be passed in deep enough to reach the fluid; and when it is in, the incision should be continued upward and downward, in such a manner as to divide all the skin covering the matter. In directing the incision to be so made, it is supposed that the patient stands on his feet, with his legs and thighs straight, and his body leaning forward over a table, or a bed; which posture gives the fairest view of the parts; and puts them into the best position for the operation, as well as for the operator.

By these means the contents of the abscess will be discharged at once; future lodgement of matter will be prevented; convenient room will be made for the application of proper dressings; and there will be no necessity for making the incision in different directions; or for removing any part of the skin composing the verge of the anus.

In such circumstances, the rectum is wholly unconcerned, and the case is to be considered merely as an abscess in the cellular membrane;

which will require to be digested, incarnated, and (if practicable) healed, without meddling with the rectum in any manner.

The sinus, indeed, in this case, will not always become perfectly close, and heal: but, as Mr. Pott observes, the aim and conduct of nature is not, therefore, the less evident; nor the hint which art ought to borrow from her, the less palpable.

But though large abscesses formed in the neighbourhood of the rectum, will sometimes be cured by light, easy treatment, without any necessity of meddling with the gut, it much more frequently happens, that the intestine, although it may not have been pierced, or eroded by the matter, has yet been so stripped, or denuded, that no consolidation of the sinus can be obtained, but by a division; that is, by laying the two cavities, viz. that of the abscess, and that of the intestine, into one. The necessity of doing this, Mr. Pott observes, may, in many cases, be known by the surgeon, on opening the abscess, when he finds the intestine bare; but in other instances, he may have reason, at first, to flatter himself with success, and be disappointed.

When the gut is found to be in such a state, that there is no reason to expect a cure, without its being divided, it is advisable on many accounts,

counts, to perform the operation at the time the abscess is opened. For if done in the proper manner, it will add so little to the pain, which the patient must feel by opening the abscess, that he will seldom be able to distinguish the one from the other, either in respect of time or sensation. But, on the contrary, if it be deferred, he must either be in continual expectation of a second cutting, or feel one at a time when he does not expect it.

The intention, in this operation is to divide the rectum, from the verge of the anus, up as high as the top of the cavity in which the matter was formed ; thereby to lay the two cavities of the gut and abscess into one, and by means of an open, instead of a hollow, or sinuous fore, to obtain a permanent cure.

For performing the operation, Mr. Pott recommends the curved probe pointed knife, with a narrow blade, as the most useful and handy instrument. This introduced into the sinus, while the surgeon's fore-finger is in the intestine, will enable him to divide all that can ever require division ; and that with less pain to the patient, and with more facility to the operator, as well as with more certainty and expedition than any other instrument that has been hitherto invented. If there be no opening in the intestine, the

smallest degree of force will thrust the point of the knife through, and thereby make one: if there be one already, the same point will find and pass through it. In either case it will be received by the finger in ano; will thereby be prevented from deviating; and being brought out by the same finger, must necessarily divide all that lies between the edge of the knife, and the verge of the anus: that is, must by one simple incision (which is made in the smallest space of time imaginable) lay the two cavities of the sinus, and of the intestine, into one.

Authors have made a very formal distinction between those cases in which the intestine is pierced by the matter, and those in which it is not; but Mr. Pott observes, that though this distinction may be useful, when the different states of the disease are to be described, yet in practice, when the operation of dividing the gut becomes necessary, such distinction is of no consequence at all; it makes no alteration in the degree, kind, or duration of pain, which the patient is to feel; the force required to push the knife through the tender gut, is next to none; and when its point is in the cavity, the cases are exactly similar.

The method above described, of performing the operation, is repugnant to the opinion of
many

many practitioners, who think that the removal of some part, both of the intestine and of the verge of the anus, is necessary in the cases at present under consideration; but Mr. Pott assures us that long and repeated experience has convinced him of the contrary.

Immediately after the operation, a soft dossil of fine lint should be introduced (from the rectum) between the divided lips of the incision; as well to repress any slight hæmorrhage, as to prevent the immediate re-union of the lips; and the rest of the sore should be lightly dressed with the same. This first dressing ought to remain until a beginning suppuration renders it loose enough to come away easily; and all the future should be as light, soft, and easy as possible, consisting only of such materials as are likely to promote kindly and gradual suppuration. The sides of the abscess are hard; the incision must necessarily, for a few days, be inflamed; and the discharge will, for some time, be discoloured and gleety. This induration, and this sort of discharge, Mr. Pott observes, are often mistaken for signs of diseased callosity and undiscovered sinuses; upon which presumption escharotics are freely applied, and diligent search is made for new hollows. The former of these most commonly increase both the hardness and the

gleet; and by the latter new sinuses are sometimes really produced. These occasion a repetition of escharotics, and perhaps of incisions; by which means, cases which at first were simple and easy of cure, are rendered complex and tedious.

Hitherto we have treated of the cases, in which we supposed the matter of the abscess to have been formed, and collected; but still to be contained within the cavity, until discharged by an incision. We now proceed to consider those whence the matter has been spontaneously evacuated, without the assistance of art.

This state of the disease, Mr. Pott remarks, is also subject to some variety of appearances, which have produced, not only a multiplicity of appellations, but a groundless supposition of a variety of essentially different circumstances.

When a discharge by incision is too long delayed, or neglected, the matter procures an outlet for itself, by bursting the external parts somewhere near to the fundament; or by eroding the intestine, and sometimes by both. In either case, the discharge is sometimes made by one orifice only, and sometimes by more. Those in which the matter has made its escape by one or more openings, through the skin only, are called blind, external fistulæ; those in which the
discharge

discharge has been made into the cavity of the intestine, without any orifice in the skin, are named blind, internal; and those which have an opening both through the skin, and into the gut, are called complete fistulæ.

This, Mr. Pott observes, is the language of all writers; and thus all those cases are deemed fistulous, when hardly any of them ever is such, and none of them necessarily. They are still mere abscesses, which are burst without the help of art; and if noticed in time, will require no such treatment as a true fistula may possibly stand in need of.

The most common species are the blind, external, and the complete. The method by which each of these states may be known, is by introducing a probe into the sinus by the orifice in the skin, while the fore-finger is within the rectum.

Whether the case be what is called a complete fistula, or not; that is, whether there be an opening in the skin only, or one there, and another in the intestine, the appearance to the eye is much the same. Upon the discharge of the matter, the external swelling subsides, and the inflamed colour of the skin disappears; the orifice, which at first was sloughy and foul, in a day or two becomes clean, and contracts in size; but
the

the discharge, by fretting the contiguous parts, renders the patient still uneasy.

As this kind of opening seldom proves sufficient for a cure, (though it sometimes does) the induration ceases not entirely; and if the orifice happens not to be a depending one, some part of the matter lodges, and is discharged by intervals, or may be pressed out by the fingers of an examiner. The disease, in this state, is not very painful, but troublesome, nasty, and offensive; and the continual discharge of a thin kind of fluid from it, creates heat, and causes excoriation in the adjacent parts.

The means of cure formerly practised were of three kinds, viz. caustic, ligature, and incision; the two first of which are now universally exploded. Respecting that by incision, I have already described what appears to Mr. Pott to be the best and most proper method of dividing the intestine, in the case of a collection of matter formed juxta anum. The intention to be aimed at by incision, in the present case, is exactly the same, and Mr. Pott is of opinion, ought to be executed in the same manner. He never saw that any other kind of operation was necessary; he has not, for many years, performed any other; nor does he recollect a single instance, in which it has failed to produce a cure, in such cases as were

curable

curable by any means. But there being a difference of opinion, on this subject, between writers of great eminence, it is necessary to consider it at greater length.

Mr. Pott observes, it is said, and by authors to whom great regard is due, that the more simple division of the parts is not all that is requisite; that this will not effect a cure, or ensure success; that mere division of the intestine is not sufficient; and that, unless we cut out, remove, and extirpate a portion both of the intestine, and the skin which forms the verge of the anus, a firm and lasting cure will not follow.

Mr. Cheselden, in the last edition of his Anatomy, says, "The true fistula runs between the muscular and inner coat of the rectum: it is cured by opening it the whole length into the cavity of the gut: but it is yet better, if it can be done, to extirpate all that is fistulous and schirrous; for that is a sure way to make one operation perfect the cure."

In his observations, published at the end of Mr. Gataker's translation of Le Dran's Surgery, Mr. Cheselden describes a method of his own inventing, by the introduction of one blade of a pair of polypus forceps into the sinus, and the other into the rectum. By this means a certain portion of the intestine is held fast,
between

between the chops of the instrument, in order to be cut out with the scissars.

After giving an explanation of a plate, designed to represent the forceps introduced in such a manner as to hold the piece of intestine fast, he adds, “ I formerly cut out a pyramidal piece in the manner here described ; but I find this way with the forceps much more convenient, and more easy to be executed.”

Mr. Pott remarks, how much this method may be preferable to that which Mr. Cheselden used to practise, he knows not ; but he will venture to say, that this more easy method is horridly painful, is operose, and absolutely unnecessary towards obtaining a cure.

The orifice of the sinus in the buttock is, by Mr. Cheselden’s direction, to be first dilated with a sponge tent ; then one of the blades of a pair of large polypus-forceps is to be thrust up the sinus, while the other within the intestine pinches it between them ; and then this piece so pinched is to be snipped out by the repeated attacks of a pair of scissars. A very tedious and very painful operation, Mr. Pott observes, this must necessarily be ; and by Mr. Cheselden’s own account, not always successful : for although he does say, “ The operation being thus performed, I have never found wanting a second cutting ;” yet

yet he immediately adds, “ If, after this operation, there is still an internal discharge into the gut, it may be an useful issue ; and continue the benefit which nature designed by the disease. We should also be very careful not to perform it, when the patient is troubled with the piles ; for I have known one in that case bleed to death.”

Mr. Pott observes, that it would be no difficult matter, to make great objections to this method of operating, even if the one thing intended by it was necessary, viz. the extirpation of a portion of the rectum ; which might certainly be obtained by easier means.

Mr. De la Faye, a French surgeon of great eminence, is a warm patron of the practice of cutting away both a part of the intestine, and of the skin composing the verge of the anus. After the external incision necessary for discharging the matter has been made, he says, “ If the matter has extended itself considerably toward the buttock, another incision should be made, in such manner as to cross the former ; the angles formed by which incisions should be cut away, as well to render the external part of the wound larger than the internal, as to give room for the more convenient application of dressings to the fore.”

If, says Mr. Pott, Mr. De la Faye had ever, in his own person, had the misfortune to experience the inconvenience arising from the loss of skin near to the fundament; or had he attended to that which it produces to those, who either from choice or necessity ride or walk much, he would probably have been more sparing of it.

Mr. Pott observes, that for the first three or four days, this kind of incision does, certainly, render the application of dressings more convenient, because the wound is thereby considerably enlarged: but as soon as digestion has softened the edges of the single perpendicular incision, that difference ceases; and the dressings may be applied with equal facility to the one as to the other.

After this period is past, the difference between the two is much more considerable; the cutting away the angles, adding not a little to the length of time requisite for a cure, rendering the sore much larger, and more troublesome; and subjecting the patient, very often, to great inconvenience, arising from the kind of cicatrix which it necessarily produces.

Mr. De la Faye, after describing the manner of passing the probe, or the falcated director, in order to make a simple longitudinal division of
the

the intestine, adds, "The present practitioners do not content themselves with merely dividing the sinus; but making use of the probe as a kind of loop, they pull the parts towards them; and then, by a free and almost circular incision, cut out the whole fistula; after which, they make such an incision in the lower part, as may best serve the purpose of a free discharge of matter."

Mr. Pott observes, that this method, as far as regards the mere operation, is certainly preferable to that with the forceps and scissars; but it produces the same destruction of the parts, and the same future inconveniencies. Like that, it is founded upon a supposition, that such a removal of parts is necessary towards a cure; a supposition which is not true.

Mr. De la Faye admits, that this method of operating is not proper in certain circumstances; in which he advises the more longitudinal incision of the gut: "Nevertheless, the fistulous hollow may be so deep, or the external orifice in the buttock at such distance from the anus, that, if the operation be performed in the manner just described, it would occasion too large a loss of substance. In this case, the sinus must be opened lengthways, by means of a grooved director."

Mr.

Mr. Pott remarks, that the observation which the abovementioned author has made, concerning the loss of substance, is not only just, and true in itself, but is also an observation which, if properly attended to, will lead to a truth which Mr. De la Faye seems not to have been sufficiently apprised of; namely, that every operation of this sort, (that is, every extirpation of parts,) is unnecessary, and therefore wrong.

Large hollows, continues Mr. Pott, in which considerable quantities of matter have been formed; whose extent, with regard to the intestine, is deep; and whose orifice is in the buttock, at a distance from the anus, have always more induration about them, and discharge a greater quantity of gleet, than those which are smaller, more shallow and thinner, and the matter of which has burst its way out, by an opening near the fundament. If the former then are curable, by a mere longitudinal division of the intestine, without excision, which Mr. De la Faye, by his prescription, in some measure allows (and which is a truth beyond contradiction) surely extirpation must be unnecessary in the latter. It can hardly be supposed, that nature will be able to do more in cases attended with increased difficulties, and impediments, than in those where every circumstance is more favourable

able, every hindrance less. And yet, whoever cuts away a portion of the intestine in the latter; and omitting, or not performing, such operation in the former, finds that they will do well without it, must reason in that manner, and shut his eyes against conviction.

Mr. Pott observes, that Mr. De la Faye is, indeed, sensible of the ill consequences produced by such treatment, and has endeavoured to guard against them as well as he can; but whoever has been so unfortunate, as to have been so treated, knows, that all these precautions are, in general, ineffectual. “When, says Mr. De la Faye, a considerable portion of the verge of the anus has been cut away in the operation, and new flesh begins to fill up the void space, a short tent should be introduced into the part, in order to hinder the fundament from contracting in its diameter;”—but, adds Mr. Pott, which it will often do, in spite of all the tents in the world.

Mr. Le Dran, a writer likewise of great eminence, is very particular in respect to this disease, and the method of treating it; and is also an advocate for excision, even more than Mr. De la Faye.

Mr. Pott observes, that this writer uses the term fistula, without any regard to the data of the disease, or any attending circumstances, ex-

cept the common and almost necessary appearances, when an abscess of this kind has been suffered to burst, viz. a small orifice, some degree of induration, and a discharge of fœcal matter ; all which circumstances necessarily accompany every abscess formed in the neighbourhood of, and piercing the rectum ; and this at the very first hour, full as much as at any time after. So that, according to this manner of using the term, an abscess so circumstanced, and a fistula, are synonymous. But this, Mr. Pott apprehends, cannot be, without confounding together two things essentially different from each other. Mr. Le Dran says, “ When I see a small orifice by the side of the anus, and perceive a hardness round about it, and find that it discharges a large quantity of matter, I conclude that it is a fistula, which most probably affects the rectum. When I find something like fæces discharged from this orifice, or mixed with what is discharged from it ; or the patient informs me, that such kind of discharge is made, I call the disease a complete fistula.” This is, undoubtedly, Mr. Pott observes, the general custom ; notwithstanding which, the disease, in the state Mr. Le Dran has described it, may have no one true characteristic of a fistula ; nor require any of that treatment, which is said to be necessary

and

and proper in such case. A matter of great consequence to the patient.

In treating of the operative part, Mr. Le Dran warmly recommends the free removal, or extirpation of parts. “If the disease, says he, be on one side only, all that part of the intestine, which is laid bare by the matter, ought to be cut away; because, it is certain, that if such part be left in the wound, it will become fistulous; and that, if we only make a simple division, the divided lips will hang loose and floating in the wound; will render the application of dressings difficult, and make the sore fistulous.”

That some small part of this process may be necessary in the true, old, callous, fistulous sore, Mr. Pott does not deny (though not even then, in any degree equal to the above direction;) but that the whole of it is absolutely unnecessary in the recent abscess, he can, from repeated experience, venture to affirm. That mere division of the naked intestine (if such division be properly dressed) will not render a sinus fistulous, which was not so before, is a truth, Mr. Pott, observes, as clear as any in Euclid; and it is surprising that such an opinion could ever be embraced. The division of the intestine, by laying open the cavity of the sinus, destroys or removes the principal circumstance which can

make such a case resemble a fistula; by converting a hollow sinus ulcer into an open one: and with regard to the other characteristic, induration, certain it is, that if the knife does not find the parts hard, it cannot possibly make them so. On the contrary, it puts them under the necessity of undergoing such a degree of suppuration, as, if properly managed, will prove the cure of that very induration.

Mr. Le Dran says, “ That the lips of the wound will hang floating, will render the dressings difficult, and the sore fistulous.” On this sentence Mr. Pott remarks, that the tumid lips of the recently-made incision will certainly be a hindrance to the cramming in a quantity of dressings; and such attempts will, as certainly, increase the tumefaction and hardness; and, if persisted in, with the help of a little escharotic, may bid fair for producing a callous sore; but all this lies at the door of the surgeon, and not of the case: all this is unnecessary, improper, and pernicious. Mr. Pott says, that he cannot, under such treatment as he would call good surgery, conceive the tumefaction, and inflamed state of the lips of the divided gut to remain more than a few days; during which time, it must be the business of art to appease, relax, and produce suppuration; which, if properly executed,

executed, will infallibly prevent all tendency towards a fistulous sore, instead of producing one.

That, continues Mr. Pott, the lips of the wound in the rectum will not separate from each other, in such manner as to admit a large quantity of lint; and that the membranous structure of the part will render such lips large, and subject to inflammation, until some degree of suppuration comes on, is beyond all doubt; but neither of these are reasons for extirpation. For the inflammation will be full as high where a piece is cut out, as where the part is merely divided, and all the symptoms of pain and uneasiness full as great, if not greater. With regard to the impracticability of putting in a quantity of dressing, Mr. Pott repeats, that it is not at all necessary; but that, on the contrary, it is wrong, and tends only to mischief. A doffel or two of fine lint should, immediately after the incision is made, be placed between the divided lips, by passing them from the cavity of the rectum, laterally into the cavity of what before such division was the sinus. These should not be removed, until either the beginning suppuration, or the necessary action of the gut in going to stool, throws them out; when their place should be supplied with others of equal size, imbued with an easy, soft digestive.

Mr. Pott observes, that if the patient be in health, the lips of this wound, like those in all other membranous parts, after they have been crude, tumid, and inflamed, and have, for a few days, discharged a thin, discoloured kind of gleet, will begin to suppurate. If such suppuration be by proper, that is, by soft, gentle treatment, encouraged, not only the tumefaction and inflammatory hardness brought on by the incision will soon disappear; but also all the induration, which attended the sinus before it was laid open.

On the other hand, if the patient's habit be bad, and no such inflammatory tumefaction succeed to the incision; but instead of it, the lips of the wounds are soft, flabby, and inclining to be livid, the case has, undoubtedly, an unpromising appearance. But the remedy is not surgical; removal of parts will not remove or amend this state of the sore, or at all lessen the hazard arising from it. It may, indeed, render the introduction of dressings somewhat more easy; but it neither will, nor can, make such dressings more effectual, or more conducive to the one end which ought to be pursued. In such case, the remedy must be an internal one; and whoever depends upon externals, will give his patient much unnecessary trouble, and only waste his time.

Mr. Pott farther observes, that the truth is, this doctrine of the necessity of cutting out a portion of the intestine, (though it is as old, or perhaps older than Celsus) is almost a necessary consequence of the manner in which these sores (upon a supposition of their being fistulous) almost always have been, and do still continue to be, generally treated. He means the custom of cramming them full of lint; and of charging that lint with medicines, which though used under more gentle appellations, are really escharotics. Upon this plan, he readily admits that the lips of the divided intestine will be in the way, and prove a considerable impediment in the introduction of such dressings. He will also admit, that by means of such medicines, the whole wound will be irritated, inflamed, and hardened; and so far wear the appearance of being fistulous, as neither to yield good matter, nor be disposed to heal; at least, not till nature has got the better of the surgeon.

What Mr. Le Dran says, in another paragraph on the same subject, may serve to confirm Mr. Pott's assertion.—“ If the gut be denuded on both sides, a counter-opening should be made on the other side, long enough to permit, conveniently, the application of dressings; and then we should wait, and see what nature will do to-

ward assilling the patient." A very important piece of advice this, says Mr. Pott; worth all the directions for the extirpation of parts; and which, if timely and duly attended to, will generally render all such directions quite unnecessary.

Mr. Pott observes, it is indeed somewhat remarkable, that the same gentleman should give the above very excellent advice; and, almost in the same breath, add what follows.—“ If the intestine be bared by the matter all round, and this denudation does not extend above the levatores ani, all that part which is so bared should be extirpated.” That is, says Mr. Pott, the whole verge of the anus: all that part which is so formed by nature, as, by its relaxation, to permit the largest, and most solid stool to pass out; and by its constriction, to detain and keep in, for a while, the most fluid, sharp, and stimulating one: all that part, which, when destroyed or removed, not only never can be renewed, but never can have its place supplied, nor its office properly executed by what must succeed to it.

Mr. Pott remarks, that Mr. Le Dran, though he so strongly recommends the extirpation of a portion of the intestine, yet has made the same observation on those fistulæ which run too high for extirpation, as Mr. De la Faye. He has

very juſtly remarked, ſays Mr. Pott, that they will do well without ſuch operation; and has given ſo good, and ſo true an account of the matter, that it is amazing he ſhould not ſee, that the ſame method, both of reaſoning and of acting, was equally applicable to both caſes; that is, to thoſe fiſtulæ which do not extend ſo high, as well as to thoſe which do: for Le Dran ſays, “ Sometimes we meet with ſinufes, which run ſo high in the tela cellulofa, along the rectum, and up toward the bladder, that one would be inclined to believe them to be incurable, from their being beyond the reach of the finger; but I have learned from experience, that theſe ſinufes fill up within the firſt fix days. Or, to ſpeak more properly, the membranes, which have been only ſeparated, and not diſſolved, by the matter, again approach each other.”

Can any man, ſays Mr. Pott, give a more rational, or more true account of this matter; or produce a ſtronger argument againſt cutting out a part of the intefline? The operator’s finger cannot reach the upper part of the ſinus, and therefore he cannot extirpate. But ſinufes, which, by being out of reach, cannot be extirpated, do well without it, merely by the help of nature, who, when the matter is diſcharged, and ſuch an opening made, as prevents any future lodgment, brings

brings the sides of the cavity together, and thereby endeavours to obliterate it. It is true, that she can but seldom accomplish this end entirely, that is, throughout the whole length of the sinus; the lower part generally remaining open, though contracted to narrow compass. This it is, most frequently, absolutely necessary to divide, in order to obtain a cure; but that part of the sinus, (if there be any) which is out of the reach of the instrument guided by the finger in ano, is not a matter of such consequence as it is supposed to be. If the lower part, or what is fairly within reach, be divided, such division will, in most cases which are curable at all, be fully sufficient for a cure. This is repugnant to the generally received doctrine; but Mr. Pott informs us, that from frequently repeated experience, he knows it to be true; and he is much inclined to believe, that the supposition of the necessity of laying open the whole sinus, however deep it may run, has contributed greatly to the fatigue and hazard which many people have unnecessarily undergone in this disease. It has occasioned such poking with long probes, and such cramming in of tents and dressings, as have proved extremely pernicious, and brought on symptoms and trouble, which would not have attended the same cases under other management.

As

As Mr. Pott has given his opinion so freely, concerning the practice of excision, he thinks that a representation of the inconveniences likely to arise from it, might, from him, be esteemed an exaggeration; and he therefore chooses to quote the authority of Le Dran on this subject; who, considered as patron of the practice, cannot be supposed to place it in an unfavourable light. The latter says, “ This large wound should, at the first, be dressed like any other; but when the sides begin to approach each other, it will then demand particular attention, lest the fundament should become so contracted, that the fæces, if they be at all hard, cannot be expelled. Therefore, in order to keep the passage of a proper size, a smooth tent made of linen should be introduced; which tent should be of such size and length, as to serve the purpose for which it is intended. Toward the close of the cure, in the place of this, an ivory suppository, made in the form of a canula, must be substituted, and kept constantly in, by means of a proper bandage. This suppository must be worn for near a year after the sore is perfectly healed; otherwise the cicatrix will contract the anus still more and more every day.”

Mr. Pott observes that this operation, of cutting for the fistula, has the sanction of several writers;

writers ; that it is practised by many Surgeons ; and that it is recommended and exhibited by anatomico-chirurgical teachers ; but notwithstanding those authorities, he scruples not to say, that it is cruel, unnecessary, and wrong. That, by these means, abscessus juxta anum, and fistulæ in ano, are cured, he makes no doubt ; nay he knows that they are : but he also knows from repeated experience, that they are curable by means which are more expeditious, more easy, and neither hazardous in the use, nor productive of evil in the event. He means, by mere simple division of all that part of the sinus which is within reach ; by soft, gentle treatment of the sore after such operation ; and by proper care of the habit. The hæmorrhage, (to say nothing of the pain) which now and then attends the extirpation of a large piece of the intestine and fundament, is alarming, both to weak minds and to weak bodies ; and the inconveniences arising from loss of substance about the verge of the anus, either in strong exercise, in the retention of loose stools, or the expulsion of hard ones, are so great, that Mr. Pott has known several people, who have daily, and sincerely wished for their uncut fistulæ again ; and who, either from pain, or uncleanliness,

cleanliness, or both, have been rendered truly unhappy.

In short, Mr. Pott ventures to assert, from many years experience, on a great variety of subjects, that when the disease is curable by chirurgic art, the method which he has proposed will, with more ease, expedition, and certainty, attain that end, than the method by extirpation; and that, without producing any of those very disagreeable circumstances, which Mr. Le Dran has so justly described.

Hitherto we have treated of the disease either as an abscess, from which the matter has been let out by an incision, made by a surgeon; or from which the contents have been discharged by one single orifice, formed by the bursting of the skin, somewhere about the fundament; we shall next consider it, when, instead of one such opening, there are several.

Mr. Pott observes that this state of the case generally happens, when the matter collected has been large, the inflammation of considerable extent, the adipose membrane very sloughy, and the skin worn very thin before it bursts. He adds, it is a circumstance of no real consequence; but from being misunderstood, or not properly attended to, is made one of additional terror to the patient, and of alarm to the inexperienced practitioner :

practitioner: for it is taught, and frequently believed, that each of those orifices is an outlet from, or leads to, a distinct sinus, or hollow; whereas, in truth, the case is, most commonly, quite otherwise. All those openings are only so many distinct burstings of the skin covering the matter; and do all, be they few or many, lead, and open immediately into the one single cavity of the abscess. They neither indicate, lead to, nor are caused by distinct sinuses; nor would the appearance of twenty of them (if possible) necessarily imply more than one general hollow.

It follows from the above representation, that the chirurgic treatment of this kind of case ought to be very little, if at all, different from that of the preceding; and that all that can be necessary to be done, must be, to divide each of those orifices, in such manner, as to make one cavity of the whole. This, Mr. Pott observes, the probe knife will easily and expeditiously perform; and when that is done, if the sore, or more properly edges, should make a very ragged, uneven appearance, the removal of a small portion of such irregular angular parts will answer all the purposes of making room for the application of dressings, and for producing a smooth, even cicatrix, after the sore shall be healed.

When

When a considerable quantity of matter has been recently let out, and the internal parts are not only in a crude, undigested state, but have not yet had time to collapse, and approach each other, the inside of such cavity will appear large; and if a probe be pushed with any degree of force, it will pass in more than one direction into the cellular membrane, by the side of the rectum. But, says Mr. Pott, let not the unexperienced practitioner be alarmed at this, and immediately fancy that there are so many distinct sinuses; neither let him, if he be of a more hardy disposition, go to work immediately with his director, knife, or scissars: let him enlarge the external wound, by making his incision freely; let him lay all the separate orifices open into that cavity; let him divide the intestine lengthwise by means of his finger in ano; let him dress lightly and easily; let him pay proper attention to the habit of the patient; and wait, and see what a few days, under such conduct, will produce. By this, he will frequently find, that the large cavity of the abscess will become small and clean; that the induration round about will gradually lessen; that the probe will not pass in that manner into the cellular membrane; and, consequently, that his fears of a multiplicity of sinuses were groundless.

less. On the contrary, if the sore be crammed, or dressed with irritating, or escharotic medicines, all the appearances will be different: the hardness will increase; the lips of the wound will be inverted; the cavity of the sore will remain large, crude, and foul, the discharge will be thin, gleety, and discoloured; the patient will be uneasy and feverish; and, if no new cavities are formed by the irritation of parts, and confinement of matter; yet the original one will have no opportunity of contracting itself, and may, very possibly, become truly fistulous.

Mr. Pott will not affirm, that there never is more than one sinus running along the side of the intestine (on the same side); but he will venture to assert, that, for one instance, in which the case is really so, forty are supposed, and talked of. Distinct and separate openings in the skin, from the same cavity, or sinus, are common; but perfectly distinct sinuses, running along the intestine, on the same side, are very far from being so; they are very uncommon.

Mr. Pott informs us, that he does not know any applications, which are at all specific, or more proper for this kind of sore than for all others, in parts of the same structure. The most simple, and they which give the least pain, are the best. Neither those, nor mere dry lint, should

should ever be introduced in larger quantity than can be admitted and borne with ease, that the fore may not be distended, but a fair opportunity be given to nature to contract it gradually.

It sometimes happens, that the matter of an abscess, formed juxta anum, instead of making its way out through the skin, externally near the verge of the anus, or in the buttock, pierces through the intestine only. This is what is called a blind internal fistula.

In this case, after the discharge has been made, the greater part of the tumefaction subsides, and the patient becomes easier. If this does not produce a cure, which sometimes, though very seldom, happens, some small degree of induration generally remains in the place where the original tumor was. Upon pressure on this hardness, a small discharge of matter is frequently made per anum; and sometimes the expulsion of air from the cavity of the abscess into that of the intestine, may very palpably be felt, and clearly perceived by the ear. The stools, particularly, if hard, and requiring force to be expelled, are sometimes smeared with matter; and although the patient, by the bursting of the abscess, is relieved from the acute pain, which the collection occasioned;

yet he is seldom perfectly free from a dull kind of uneasiness, especially if he sits for any considerable length of time in one posture. The real difference between this kind of ease, and that in which there is an external opening (with regard to method of cure) is very immaterial; for an external opening must be made, and then all difference ceases. In this, as in the former, no cure can reasonably be expected, until the cavity of the abscess, and that of the rectum, are made one; and the only difference is, that in one case there is an orifice at, or near, the verge of the anus, by which we are immediately enabled to perform the necessary operation; in the other, we must make one.

Mr. Pott is of opinion, that some of the best modern writers have represented this state of the disease, in such manner, as to make it seem to labour under difficulties, which he cannot say that he ever found it really did; and have thereby thrown the appearance of obscurity and trouble, on what is generally clear and easy. He observes, that in Mr. De la Faye's excellent notes on Dionis, there is the following passage: When fistulæ have no external opening, and there is no mark, by which to distinguish the place where the operation ought to be performed, there are two methods of discovering it.

The

The former is that of the late Mr. Thibaut, who put his fore-finger into the rectum, and curving it, endeavoured to bring the foyer, (that is, the hollow which furnishes the matter) nearer to the external part of the fundament; while, with his other finger, he pressed all the contiguous parts. The pain which he, by these means, gave to the patient, marked out the place where the incision ought to be made, in order to render the fistula complete. The latter method is that of Mr. Petit. He put into the anus, for the space of twenty-four hours, a tent; which, by stopping up the orifice of the fistula, hindered the matter from running out into the cavity of the gut, and forced it to be collected in such quantity as to form an external tumefaction, sufficient to indicate the place where the operation ought to be performed."

Mr. Pott observes, that the former of these, as far as it depends on that single circumstance, that the point where the pain is felt is the exact place where the opening ought to be made, is, by no means, to be depended upon; and the latter method is operose, troublesome, and, in general, very insufficient for the purpose. If the orifice, through which the matter has made its way, lies high in the intestine, a tent cannot be introduced so as to press against it sufficiently,

unless it be so long, and so large, as to occupy the whole cavity of the gut. How fatiguing, and how difficult, the retention of this, for twenty-four hours, must be to many people, it is easy to imagine. If the orifice be near to the fundament, in the lower part of the intestine, the possibility of closing it may be somewhat greater; but the inconvenience, as well as the uncertainty, must be nearly the same.

Not to enter farther into this totally unnecessary kind of practice, Mr. Pott would advise the man who thinks to try it, to consider the stricture made by the contraction of the verge of the anus; the expansion of the cavity of the gut, immediately above that stricture; the great dilatability of the membranes of the intestine, and the uneven wrinkled state in which it must necessarily be; and then to reflect how very unlikely it is, that he should, without filling the whole cavity, stop, or block up a small breach, the exact situation of which he cannot know, nor learn.

Mr. Pott admits, that by the discharge of the matter into the cavity of the intestine, the fluctuation of it within the abscess is no more to be felt; the tension ceases; the tumor, in a great measure, subsides; and, consequently, all these indications

indications of its situation disappear. But he does not remember ever to have seen a single case of this kind, in which there was not in the buttock, or near the verge of the anus, either a remaining discoloration of the skin, or a hardness or something by which the finger of a careful, judicious examiner could clearly and certainly find where the disease was. Each of the circumstances just mentioned do, as certainly, point out where the hollow leading to the sinus is, as the fluctuation of the matter did, before the cavity burst ; and a knife, or lancet, plunged into this (provided it be pushed deep enough) will never fail to enter the hollow. When this is done, the case becomes what is commonly called complete, and must be treated accordingly.

We proceed now to that state of the disease, which may truly and properly be called fistulous, and is generally defined, *sinus angustus, callosus, profundus, acri sanie diffluens*.

Mr. Pott observes, that various causes may produce, or concur in producing, such a state of the parts concerned as will constitute a fistula, in the proper sense of the word ; that is, a deep, hollow sore, or sinus, all parts of which are so hardened, or so diseased, as to be absolutely incapable of being healed, while in that state ; and

from which a frequent, or daily discharge is made, of a thin, discoloured sanies, or fluid.

These Mr. Pott divides into two classes, viz. such as are the effect of neglect, distempered habit, or of bad management, and which may be called local diseases; and into such as are the consequence of disorders, whose origin and seat are not immediately in the sinus or fistula, but in parts more or less distant; and which, therefore, are not local complaints. These two classes are not more different from each other in their nature and character, than they are in their most frequent event; the former being generally curable by proper treatment; but the latter often resisting the most efficacious means of art.

Under the former, Mr. Pott reckons all such cases as were originally mere collections of matter within the coats of the rectum, or in the cellular membrane surrounding that gut; but which, by being long neglected, grossly mismanaged, or by happening in vitiated habits, degenerate into such a state as to deserve the appellation of fistulæ.

Under the latter are comprehended all those cases, in which the disease has its origin in the higher and more distant parts of the pelvis; about the os sacrum, lower vertebræ of the loins, and parts adjacent; and are either stru-
mous

amous, or the consequence of long and much distempered habits; or which either accompany, or are the effect of, other distempers local or general; such as a diseased neck of the bladder, prostate gland, or urethra; the lues venerea, cancers, &c.

Mr. Pott observes, that among the very low people, who are brought into hospitals, we frequently meet with cases of the former kind; cases which were at first mere simple abscesses; but which from uncleanness, intemperance, negligence, and distempered constitutions, become such kind of sores as may be called fistulous.

In these the art of surgery is seldom the principal fountain whence relief is to be sought. The general effects of intemperance, and diseases of the habit, are first to be corrected and removed. If the patient be infected with the lues venerea, that must first be cured; if he be anasarcaous, or leucophlegmatic, that indisposition must be corrected; if he be feverish, that heat must be calmed; and if he labour under any of the general ill effects arising from foul skin, dirty cloathing, unclean, and unwholesome lodging, &c. producing pallid countenance, undue secretions, loss of appetite, œdematous legs, intermittent fevers, &c. the state of blood, which

always accompanies such complaints, must be amended, before surgery can be administered to any good purpose, or even without bad effects. But when the habit is corrected, the local disease generally suffers a favourable change, in all the principal circumstances of induration, crudity, gleet, &c.

The operation required in those cases consists in laying open, and dividing the sinus, or sinuses, in such manner as to leave no possible lodgment for matter ; and that such cavities may be fairly opened lengthways into that of the rectum. If the internal parts of those hollows be hard, and do not yield good matter, which is sometimes the case, especially where the cure has been attempted by injecting astringent liquors, such parts should be lightly scratched, or scarified, with the point of a knife or lancet, but not dressed with escharotics ; and if, either from the multiplicity of external orifices, or from the loose, flabby, hardened or inverted state of the lips and edges of the wound near to the fundament, it seems very improbable that they can be brought into such a state, as to heal smooth and even, such portion of them, as may just serve the purpose, should be cut off. The dressings should be soft, easy, and light ; and the whole intent of them to produce such suppuration as
may

may soften the parts, and bring them into a state fit for healing.

If a loose, fungous kind of flesh has taken possession of the inside of the sinus, (a thing, says Mr. Pott, much talked of, and very seldom met with) a slight touch of the lunar caustic will reduce it sooner, and with better effect on the fore, than any other escharotic.

The method and medicines by which the habit of the patient was corrected, must be continued (at least in some degree) through the whole cure; and all those excesses and irregularities must be avoided.

Mr. Pott observes, that by these means, cases, which at first have a formidable aspect, are frequently brought into such state, as to give very little trouble in the healing; and to be completely cured, without any of those operations that are so much dreaded, and which are, in general, taught and practised.

If the bad state of the sore arises merely from the improper manner in which it has been treated, that is, from its having been crammed, irritated, and eroded, the method of obtaining relief is so obvious, as hardly to need being recited. In this case the surgeon ought to avoid all escharotics, and to use in their stead a soft digestive, in such manner as not to cause any distention,

distention, nor to give any uneasiness from quantity. Over it a poultice should be applied. These dressings ought to be renewed twice a-day, and the patient be enjoined absolute rest. At the same time attention should be paid to the general disturbance which the former treatment may have created. Blood should be drawn from the plethoric; the feverish heat, where it subsists, should be calmed by proper medicines; the languid and low should be assisted by the bark and cordials; and ease in the part must, at all events, be obtained by the injection of anodyne clysters of starch and opium.

If the sinus has not yet been laid open, and the bad state of the parts is occasioned by the introduction of tents imbued with escharotics, or by the injection of astringent liquors, no operation of any kind should be attempted, until both the patient and the parts be easy, cool, and quiet. These ends must be obtained by the use of cataplasms, clysters, rest, and proper medicines; and when accomplished, the operation of dividing the sinus, and (if necessary) of removing a small portion of the ragged edges, may be performed, which will, in all probability, be attended with success.

Abscesses,

Abscesses, and collections of diseased fluids, are frequently formed about the lumbal vertebræ, under the psoas muscle, and near to the os sacrum; in which cases, these bones may become carious, or otherwise diseased; sometimes forming sinuses, which run down by the side of the rectum, and burst near the fundament.

Persons who have long laboured under a cachectic habit, have sometimes large collections of matter formed in the cellular membrane within the cavity of the pelvis; which also form sinuses, and burst their way out near the anus. These sinuses from the nature of the discharge, from the depth of the seat of the disease, and from the length of time which the drain continues, almost necessarily become fistulous. Such collections sometimes prove salutary crises, though much more frequently they hasten the patient's dissolution. But be the event what it may, notwithstanding the sore be certainly fistulous, yet can the art of surgery afford but very little relief. If the event be fortunate, the crisis must be far advanced, and very nearly determined, before any operation, or even dressing (except what is superficial, and merely for the purpose of cleanliness) can be of any use; and if the discharge proves too great for the strength of
I the

the patient, neither the art of surgery, nor indeed any other, can avail him.

On the other hand, if nature be so powerful, that, by means of this drain, she can free the habit from its former diseased state; or if by the help of medicine, such alteration can be effected, the fistula will not prove very troublesome. For the same alteration, at least in some degree, will be found to have been made in the latter; and if it be not thereby brought absolutely into a healing state, yet it will be so much changed in its principal circumstances, that the common method, already laid down, will be sufficient for the completion of the cure.

Such, on this disease, are the valuable observations with which the world has been favoured by Mr. Pott, who has thrown more light on the nature and treatment of fistulæ than all preceding writers.

Of a MORTIFICATION of TOES and
F E E T.

THIS is another disorder, the nature and treatment of which have been greatly illustrated by the experienced practitioner, whose authority has been so frequently mentioned in the preceding article.

Mr. Pott observes, that among the many cases in which the virtues of the Peruvian bark are particularly and justly celebrated; must be reckoned the distempers called gangrene and mortification. Its general efficacy in stopping one, and resisting the other, have made no inconsiderable addition to the success of the chirurgic art; but even of those disorders, there is a particular species, in which this excellent medicine most frequently fails. The kind here meant is that which beginning at the extremity of one or more of the small toes, does, in more or less time, pass on to the foot and ankle, and sometimes to a part of the leg, and in spite of all the aid of physic and surgery, most commonly destroys the patient.

It is very unlike to the mortification from inflammation, to that from external cold, from
ligature,

ligature, or bandage, or to that which proceeds from any known and visible cause ; and this not only in its attack, but in its progress. In some few instances it makes its appearance with little or no pain ; but in far the greater number, the patients feel much uneasiness through the whole foot and joint of the ankle, particularly in the night, even before those parts shew any external signs of distemper, or before there is any other than a small spot on the end of one of the toes.

It generally makes its first appearance on the inside, or at the extremity of one of the smaller toes, by a small black, or bluish spot ; from which the cuticle is always found to be detached, and the skin under it of a dark red colour.

If the patient has lately cut his nails or corns, it is most frequently, though very unjustly, imputed to that operation.

Its progress in different subjects, and under different circumstances, is different. In some it is slow and long in passing from toe to toe, and thence to the foot and ankle ; in others its progress is rapid and horridly painful. It generally begins on the inside of each small toe, before it be visible either on its under or upper part ; and when it makes its attack on the foot, the upper part of it first shews its distempered state, by
tumefac-

tumefaction, change of colour, and sometimes by vesication. But wherever it is, one of the first marks of it is a separation or detachment of the cuticle.

Both sexes are liable to this disorder ; but Mr. Pott informs us, that for one female in whom he has met with it, he thinks he may say, that he has seen it in at least twenty males. He has also much more often found it in the rich and voluptuous, than in the labouring poor ; and more often in great eaters, than free drinkers. It frequently happens to persons advanced in life, but is by no means peculiar to old age. It is not, in general, preceded or accompanied by apparent distemperature either of the part, or of the habit. Mr. Pott knows not any particular kind of constitution more liable to it than another ; but as far as his observation goes it has most frequently attacked such as have been subject to flying pains in their feet, which they reckoned gouty ; and but seldom in those who have been accustomed to regular fits of the true gout. It has by some been supposed to arise from an ossification of vessels ; but Mr. Pott considers this opinion as merely conjectural.

The common method of treating this distemper is by spirituous fomentations, cataplasms actually and potentially warm, by dressings of
the

the digestive kind, mixed with warm, pungent oils, balsams, &c. and, internally, by the Peruvian bark. This method of practice, however, Mr. Pott, from long and repeated experience, affirms to be unsuccessful; and the bark, so valuable in other mortifications, he has found ineffectual in this species. He has given it in the largest quantity, at the shortest intervals, and for the longest possible space; that is, so long as the patient's life would permit. He has given it by itself in decoction, extract, and substance; he has combined all those together; he has joined it with nitre, sal absynthii, and with snake-root, with confectio cardiaca, volatile salts, and musk, as different circumstances seemed to require, or admit. He has used it as fomentation, as poultice, and as dressing: he has assisted it with every thing that is usually employed for promoting digestion; still the distemper has continued its course, perhaps a little more slowly, but always ended in death.

Mr. Pott informs us, that some time ago, he had a patient labouring under this complaint, who, from antipathy, obstinacy, or some other, cause, could not be persuaded to take the Peruvian bark in any form. Fomentation, poultice, and the common dressings, were applied in the usual manner; the disease advanced some days more,

some

some days less ; at the end of a fortnight the small toes were all completely mortified, the great one become blackish, the foot much swollen, altered in colour, and the disease seeming to advance so fast, that Mr. Pott imagined a very few days would determine the event. The pain in the foot and ankle was so great, and so continual, as totally to deprive the patient of sleep. On this account, and merely to procure remission, Mr. Pott gave at night two grains of opium, which not having the desired effect, he repeated it in the morning. Finding, during the following day, some advantage, he repeated the same dose night and morning for three days ; at the end of which time the patient became quite easy, and the appearances on the foot and ankle were visibly more favourable. Encouraged by this, he increased the quantity of the medicine, giving one grain every three or four hours, taking care to watch its narcotic effect, and to keep the belly empty by clysters. In nine days from the first administration of the opium, the tumefaction of the foot and ankle totally subsided, the skin recovered its natural colour, and all the mortified parts plainly began to separate. In another week they were all loose, and casting off, the matter was good, and the incision florid. During the whole of this time Mr. Pott continued the use of the opium, vary-

ing its quantity as circumstances required ; but never gave less than three or four grains in twenty-four hours.

When the sloughs were all cast off, the bones separated ; and there being only a clean sore to dress and heal, the medicine was gradually left off.

Mr. Pott acknowledges, that however well pleased he was with the event of the case, yet he really considered it as accidental ; inasmuch, that having very soon after another opportunity, he did not care to trust to opium alone, but joined the bark with it. The event was equally fortunate. But though he therefore attributed the success to the united powers of those medicines, the effect was so very unlike to what he had ever seen from the bark without opium, that he at length determined to use the latter by itself, whenever another opportunity should offer. This happening some time after, he accordingly did so, and succeeded in the same happy manner ; though the patient was seventy years of age, of a broken, disordered constitution, and the disease making a hasty progress. Every opportunity which Mr. Pott has since had of making the experiment, has more and more convinced him of the great utility of this medicine, and of its power of rescuing from destruction persons who

are

are afflicted with this disorder. He cannot say that it has never failed him : he acknowledges that it has ; but then it was under such circumstances, as he thinks would fairly account for the failure. In short, from what has been seen and done, he is perfectly convinced, that, by means of it alone, he has saved lives which, without it, must have been lost.

Mr. Pott observes, that if the method of cure which he has proposed and practised, should prove as successful in the hands of others, as it has in his own, he cannot help thinking that the external or chirurgic treatment of the disorder might be amended, and made to coincide more than it does at present with such soothing kind of plan.

Mr. Pott informs us, that since he has embraced this opinion, and acted in conformity to it, he has found more advantage from frequently soaking the foot and ankle in warm milk, than from any spirituous or aromatic fomentations whatever ; that is, he has found the one more capable of alleviating the pain, which such patients almost always feel, than the other ; a circumstance he regards as very material. Whatever heats, irritates, stimulates, or gives uneasiness, appears to him always to increase the disorder, and to add to the rapidity of its progress : while on the contrary, he has always found, that what-

ever tended merely to calm, to appease, and to relax, at least retarded the mischief, if it did no more.

He observes, that the chirurgic treatment of this disease has hitherto been founded on a general idea of warming, invigorating, stimulating, and resisting the putrefaction, and the means generally used are very proper for such purpose; but he thinks that this purpose is entirely repugnant to the true indications of the disorder.

Upon this principle, the old *Theriaca Londinensis*, and the present *Cataplasma e Cymino*, have been, and still are, so freely used on this occasion. A composition of this kind, if it does any thing, must heat and stimulate; and by this action, Mr. Pott observes, it so frequently does that mischief which is set to the account of the nature of the disorder.

When the black, or mortified spot has fairly made its appearance on one or more of the toes, it is the general practice to scarify or cut into such altered part with the point of a knife or lancet. Mr. Pott remarks, that if this incision be made merely to learn whether the part be mortified or not, it is altogether unnecessary, the detachment of the cuticle, and the colour of the skin, rendering that a decided point. If it be not made quite through the eschar, it can serve no purpose;
if

if it be made quite through, as there is no confined fluid discharged, it can only serve to convey such medicines as may be applied for the purpose of procuring digestion to parts capable of feeling their influence.

When the upper part of the foot begins to part with its cuticle and to change colour, it is a practice with many to scarify immediately. Here, says Mr. Pott, as in the preceding instance, if the scarifications be too superficial, they must be useless ; but if they be so deep as to cause a slight hæmorrhage, and reach the parts, which have not yet lost their sensibility, they must do what indeed they are generally intended to do, that is, give the medicines which shall be applied, an opportunity of acting on such parts.

The medicines most frequently used for this purpose are, like the Theriaca, chosen for their supposed activity ; and consist of the warm, pungent oils and balsams, the action of all which must necessarily be to stimulate and irritate. From those qualities they most frequently excite pain, which, according to Mr. Pott's idea of the disease, is diametrically opposite to the proper curative intention ; and of this he is convinced from repeated experience.

Mr. Pott affirms that the dressings cannot consist of materials too soft and lenient ; nor are any

scarifications necessary for their application. But he would go farther and say, that scarifications are not only useless, but in his opinion prejudicial, by exciting pain, the great, and chiefly to be dreaded evil, in this complaint. The poultice should be also soft, smooth, and unirritating. Its intention should be merely to soften and relax : it should comprehend the whole foot, ankle, and part of the leg ; and should always be so moist or greasy, as not to become dry or hard, between one dressing and another.

The only remaining observation which Mr. Pott makes on this subject, is, that when the toes are, to all appearance, perfectly mortified, and seem so loose as to be capable of being easily taken away, it is, in general, thought right to remove them. But, he adds, however rotten or loose they may seem to be, or really are, yet while they hold on, they hold by something which is still endued with sensation, as may always be known, if they be bent back or twisted with any degree of violence ; and if they be violently twisted off, or the parts by which they hang be divided, a very considerable degree of pain will most commonly attend such operation, which therefore had much better be avoided. Mr. Pott has seen the pain thus produced bring on fresh mischief, and that of the gangrenous kind. If
the

the patient recovers, those parts will certainly drop off; if he does not, no good can arise from removing them.

Hitherto I have followed the authority of the experienced Mr. Pott; but shall now subjoin the observations of Dr. Kirkland, who is of opinion, that opium, though frequently productive of good effects, will sometimes increase this complaint. He remarks that it is not always sufficient to accomplish a cure, which may be effected by the assistance of other remedies; that its being given in large doses, will frequently frustrate our intentions; and that it may also be rendered useless by improper applications to the part. He does not remember ever seeing one instance of opium succeeding in the cure, or in the mitigation of this complaint, where fomentations and turpentine digestives were used.

Dr. Kirkland observes that the intention of opium is to diminish the irritability of the affected part; but that this disease can often only be entirely removed by the native balsams, essential oils, and the like. Pitch, he adds, has a powerful sedative quality; and an ointment of thin consistence, made of this ingredient, a small quantity of wax, and a large proportion of oil, will, for the most part, be found a remedy perfectly capable of allaying, without inconvenience, that

kind of irritability which commonly prevails in this disease; and by mixing tincture of myrrh, or the like with it, we have a good antileptic for the parts, where, on account of the sphacelus, antileptic dressings are required. If a proper quantity of opium is added to the bread and milk poultice, which covers the whole, it will be found a better remedy than the simple poultice alone. In some cases, an anodyne emollient cerate, made of diachylon, the powder of marsh-mallow leaves, or linseed flour, a little wax, opium, pitch, and oil, should be preferred.

By this method of proceeding, he observes, there is less necessity for taking large doses of opium, which frequently bring on a drunken delirium, diminish the appetite, make the patient sick, and thus do mischief, instead of good. He adds, that he has repeatedly seen this kind of mortification recover under the use of anodyne topics, after being obliged to leave off giving opium, because it brought on a delirium, and took away the appetite, without producing any good effect.

The Palsy of the LOWER EXTREMITIES.

THIS disease consists in a partial or total abolition of the power of using, and sometimes of even moving the lower limbs, in consequence, as is generally imagined, of a curvature of some part of the spine.

Both sexes and all ages are liable to this distemper. When it attacks an infant of only a year or two old, or under, the true cause of it is seldom discovered until some time after the disease has taken place. The child is said to be uncommonly backward in the use of its legs, or is thought to have received some hurt in its birth.

When it seizes a child who is old enough to have already walked, and who has been able to walk, the power of using the legs is diminished by degrees, though in general not very slowly. At first he complains of being very soon tired, is languid, listless, and averse to much motion. In a little time afterwards he may be observed to trip, and stumble, though there be no impediment in his way; and whenever he attempts to move briskly, he finds that his legs involuntarily cross each other, by which he is frequently thrown down, and that without stumbling. On endeavouring to stand still and erect, without support,

even for a few minutes, his knees give way, and bend forward. When the distemper is a little farther advanced, he cannot, without much difficulty, direct either of his feet precisely to any exact point; and very soon after this, both thighs and legs lose a good deal of their natural sensibility, and become perfectly useless for all the purposes of loco-motion. When the patient is an adult, the progress of the distemper is much the same, but rather more quick.

Until the curvature of the spine has been discovered, it generally passes for a nervous complaint; and afterwards is almost always attributed to some previous violence, such as pulling, lifting, carrying, or drawing a heavy body, which is supposed to have hurt the back. Mr. Pott observes, that in a few instances, it may have proceeded from such an exertion; but in much the greater number, this is so far from being the case, that if it be admitted to have had any share at all in producing the disease, there must have existed some predisposing cause, which, in Mr. Pott's opinion, constitutes the essence of the disease.

The abovementioned eminent writer has, in compliance with custom, called the disease a palsy; but he observes, that notwithstanding the lower limbs be rendered almost, or totally
useless,

useless, there are some essential circumstances in which this affection differs from a common nervous palsy. The legs and thighs, as has been said, are rendered unfit for all the purposes of loco-motion, and also lose much of their natural sensibility; but they have not the flabby feel, which a truly paralytic limb has, neither have they that seeming looseness at the joints, nor that total incapacity of resistance, which allows the latter to be twisted in almost all directions. On the contrary, the joints have often a considerable degree of stiffness, particularly the ancles, by which stiffness the feet of children are generally pointed downwards, and they are prevented from setting them flat upon the ground.

Mr. Pott observes that the curvature of the spine, which is supposed to be the cause of this complaint, varies in situation, extent, and degree, being either in the neck or back, and sometimes, though very seldom, in the upper part of the loins; sometimes comprehending two vertebræ only, sometimes three, or more. But whatever may be the number of vertebræ concerned, or the degree or extent of the curvature, the lower limbs only feel the effect; at least, Mr. Pott has never once seen the arms affected by it.

Our author observes, that this effect is also different in different subjects. Some are rendered

dered absolutely incapable of walking in any manner, or with any help, and that very early in the course of the distemper; others can make a shift to move about with the help of crutches, or by grasping their own thighs with their hands; some can sit in an erect posture, or in a chair, without much trouble or fatigue, which others are incapable of, at least for any length of time. Some have such a degree of motion in their legs and thighs, as to enable them to turn and move for their own convenience in bed; but others have not that benefit.

When a naturally weak infant is the patient, and the curvature is in the vertebræ of the back, the disease is not unfrequently productive of additional deformity, by gradually rendering the whole back what is called humped, and by alterations which all the bones of the thorax gradually undergo, in consequence of the weakness and flexure of the spine. But in all cases where this effect has been gradually produced, to whatever degree the deformity may extend, or however the alteration made in the disposition of the ribs and sternum may contribute to such deformity, yet Mr. Pott is of opinion it will always be found, that the curvature of the spine appeared first, and that all the other effects succeeded in consequence of it.

While

While the curvature of the spine remains undiscovered or unattended to, the case is generally supposed to be nervous, and medicines adapted to those complaints are accordingly often prescribed, with warm liniments, embrocations, and blisters, to the parts affected; and when the true cause is known, recourse is always had to steel stays, the swing, the screw chair, and other pieces of machinery, in order to restore the spine to its natural figure. But all those expedients, so far as Mr. Pott has observed, are productive of no real or permanent advantage. The patient becomes unhealthy, and after languishing for some time under a variety of complaints, dies in an exhausted state; or, what is yet worse, drags on a miserable existence, confined to a great chair, or bed, totally deprived of the power of locomotion, and useless both to himself and others.

Mr. Pott observes, that the general health of the patient does not seem at first to be materially, if at all, affected; but when the disease has continued some time, and the curvature thereby increased, many inconveniences and complaints supervene, such as difficulty in respiration, indigestion, pain, and what they all call tightness at the stomach, obstinate constipations, purgings, involuntary discharge of urine, &c. with the addition of what are called nervous complaints: some

some of which are caused by the alterations made in the form of the cavity of the thorax ; whilst others seem to arise from impressions made on the abdominal viscera. These are different, both in kind and degree, in different persons, but seem to depend much on the curvature, as the original cause.

Mr. Pott informs us, that an affecting instance of this distemper in the person of a very promising youth of fourteen years old, with whose family he was nearly connected, induced him to think more of it than perhaps he otherwise should have done ; and the restoration of the use of the patient's limbs, immediately after a seemingly accidental abscess near the part, engaged our author's attention still more, and became a matter of frequent contemplation. The more Mr. Pott thought upon the subject, the more he was inclined to suspect, that a distempered state of the parts forming, or in the neighbourhood of the curvature, preceded, or accompanied it : in short, that there was something predisposing, and that most probably an effect had been mistaken for a cause.

For those suspicions he had the following reasons :

1. That he had never seen this paralytic effect on the legs from a mal-formation of the spine,
however

however crooked the latter had been rendered, or whether such crookedness had been from the time of birth, or had supervened any time afterwards during infancy.

2. That none of those strange twists and deviations, which the majority of European women get in their shapes, from the absurd custom of dressing them in stays during their infancy, ever caused any thing of this kind, however great the deformity might be.

3. That the curvature of the spine, which is accompanied by this affection of the limbs, whatever may be its degree, or extent, is at first almost always the same; that is, it is always from within outward, and seldom or never to either side.

4. That since he had been particularly attentive to the disorder, he had remarked, that neither the degree nor the extent of the curve, made any alteration in the nature or degree of the symptoms at first, nor for some time after the appearance; or, in other words, that the smallest curvature in which only two or three of the vertebræ were concerned, was always, at first, attended by the same symptoms as the largest.

5. That although it sometimes happened that a smart blow, or a violent strain had immediately preceded the appearance of the curve, and might
be

be supposed to have given rise to it, yet in many more adults it happened that no such cause was assignable, and that they began to stoop, and to falter in their walking, before they thought at all of their back, or of any violence offered to it.

6. That exactly the same symptoms are found in infants, and in young children, who have not exerted themselves, nor have been injured by others, as in the adult who has strained himself, or received a blow; and that the case was still the same in those grown persons, who have neither done, nor suffered any act of violence.

7. That although it must be allowed, that a dislocation of any of the vertebræ would most probably be attended with the same kind of symptoms, from the pressure it must make on the spinal marrow, yet it is also most probable that such symptoms would be immediate, and attended with great pain in the part; neither of which is in general the case here.

These considerations appeared to Mr. Pott to have much force; but what confirmed him in his opinion was the state of the parts forming the curvature, and which he had several fair opportunities of examining after death. By these examinations he had found in infants, in young children, and in those who had been afflicted with the disorder but a short space of time, that the
ligaments

ligaments connecting the vertebræ, which formed the curve, were in some degree altered from a natural state, by being somewhat thickened and relaxed ; and that what are called the bodies of those bone, were palpably enlarged, just as the bones forming the articulations are in ricketty children. That in those who had long laboured under the distemper, and in whom the symptoms were aggravated, whatever might be their age, the ligaments were still more thickened, relaxed, and altered, the bodies of the bones more spread, more enlarged, and more inclining to become carious, and the cartilages between the bodies of the vertebræ, much compressed and lessened in size ; and that in all those who had so long laboured under the disease, so as to have been destroyed by it, or by its consequences, the bodies of the vertebræ were completely carious, the intervening cartilages totally destroyed, and a quantity of sanies lodged between the rotten bones, and the membrane investing the spinal marrow.

All these circumstances induced Mr. Pott, as has been said, to suspect, that when we attribute the whole of this mischief to the mere accidental curvature of the spine, in consequence of violence, we mistake an effect for a cause ; and that previous both to the paralytic state of the legs,

and to the alteration of the figure of the backbone, there is a predisposing cause of both, consisting in a distempered state of the ligaments and bones, where the curve soon after makes its appearance.

While the subject was fresh in Mr. Pott's mind, he happened to be at Worcester, and in a conversation on it with the late Dr. Cameron of that place, he mentioned his doubts and his opinion. The Doctor concurred with Mr. Pott, and at the same time mentioned some circumstances which made a strong impression on the latter. He said, that he remembered some years ago, to have noted a passage in Hippocrates, in which he speaks of a paralysis of the lower limbs being cured by an abscess in the back or loins, and that taking the hint from this, he (Dr. Cameron) had, in a case of a palsy of the legs and thighs, attended by a curvature of the backbone, endeavoured to imitate this act of nature, by exciting a discharge near the part, and that it had proved very advantageous. The same method had been found equally successful by Mr. Jeffrys, a surgeon of eminence at Worcester.

These accounts from gentlemen of veracity, and of reputation in their profession, still added to Mr. Pott's desire of knowing more on this subject,

subject, and determined him to lose no opportunity of getting information.

The first that offered was in an infant, whose curvature was in the middle of the neck, and who had lost the use of its legs for about two or three months. Mr. Pott made an issue by an incision on one side of the protuberance; and gave strict charge to the mother to take care that the pea was kept in. The woman, who had no faith in the remedy, did not take proper care, and consequently the discharge was not equal to what it should, and might have been. Notwithstanding this neglect, however, at the end of about three weeks or a month, the child was evidently better, and began to make use of its legs; when it was seized with the small-pox, and died. The bodies of the vertebræ concerned in the curve were larger than they should be, and than those above and below. Their texture was also much more open and spongy; which difference appeared immediately before the parts covering them were dissected off.

Some time elapsed before Mr. Pott had another opportunity. His next patient was a tall thin man, about thirty five years old, who thought that he had hurt himself by lifting a heavy weight. His legs and thighs were cold, and what he called mummy, but not absolutely useless. He could

with difficulty go about the room with the help of a pair of crutches, but he could neither rise from his chair, nor get on his crutches without the assistance of another person ; nor could he without them walk at all.

Mr. Pott made a seton on each side of the curve, which was about the middle of his back, and having given directions how to dress them, called on the patient once in three or four days. At the end of six weeks the latter had recovered the due degree of sensation in his limbs, and found much less necessity for the use of his crutches. He could rise from his bed, or his chair, without assistance, and by means of one crutch, and an underhand stick, could walk for an hour, or more, without fatigue. The setons had now, from not having been properly managed, worn their way out, and Mr. Pott would have converted each of them into an issue ; but as neither the patient nor his wife had ever believed that the discharge had had any share in his amendment, but on the contrary that he would have been better without it, they refused submitting to what Mr. Pott had proposed, and therefore he gave over his attendance. About three weeks afterwards he met the man walking in the street very stoutly, with a common cane, of which he made little or no use.

Mr.

Mr. Pott asking him what he had done, he answered that the sores had continued to discharge till within a few days; but that he had drank a great deal of comfrey root tea, with isinglass, which he supposed had cured him.

Mr. Pott justly believes that the cure of this man will, by all who are acquainted with medicine, be thought so unlikely to have been effected by the comfrey and isinglass, that his inference in favour of the seton will not be thought unreasonable, and that his determination to prosecute the method, from what he had heard and seen, was well founded.

Within the course of the last ten or twelve months preceding the publication of his treatise, he had several fair opportunities of making the experiment, both in St. Bartholomew's hospital, and out of it; and he informs us, that it has not only always succeeded, but, in some instances, even beyond his most sanguine expectations.

He had at that time in the hospital a boy about twelve years old, whose case was so truly deplorable, that the experiment was made merely to avoid the imputation of inhumanity. The curvature was in the back, and consisted of three or four vertebræ; but by means of the weakness that supervened, all the dorsal vertebræ had so much given way, that the boy was exceedingly

deformed both behind and before. He was so absolutely incapable of motion, that he could neither turn himself, nor sit up in his bed. His feet were pointed downwards, and his ancles so stiff, that when he was held up under the arms, the extremities of his great toes touched the floor, nor could his feet be brought flat to the ground by any means. In short, he was as totally helpless as can be imagined, and at the same time in an exceeding bad state of health, from disorders of the thoracic and abdominal viscera. In this state, he had been more than a year, when Mr. Pott published the case. It was three months since the caustics were applied: the patient was become healthy, and free from most of his general complaints, had the most perfect use of his legs when he was in bed, and could walk without any assistance. Mr. Pott adds, that notwithstanding a considerable degree of deformity remained, yet the spine in general was so much strengthened, that the patient was some inches taller than he had been four months before.

Mr. Pott informs us, that the remedy for this dreadful disease consists entirely in procuring a plentiful discharge of matter, by suppuration, from underneath the membrana adiposa on each side of the curvature, and in maintaining

such discharge, until the patient shall have perfectly recovered the use of his legs. To accomplish this purpose, Mr. Pott has made use of various means, such as setons, issues made by incision, and issues made by caustic; between which though there be no very material difference, he prefers the latter. He observes that a seton is a painful and nasty thing; besides which it frequently wears through the skin, before the design of it has been answered; and that issues made by incision, if they be large enough for the intended purpose, are apt to become inflamed, and to be very troublesome before they come to suppuration: but openings made by caustic are in general not liable to any of those inconveniences, at least, not so frequently, nor in the same degree. Neither are they so troublesome to make or to maintain. Mr. Pott makes the eschars of an oval shape, near an inch and half in length, on each side of the curve, taking care to leave a sufficient portion of skin between them. In a few days, when the eschar begins to loosen and separate, he cuts out all the middle, puts into each a large kidney-bean. When the bottoms of the sores are become clean by suppuration, he sprinkles on them, every third or fourth day, a small quantity of finely powdered cantharides, by which

the sores are prevented from contracting, the discharge is increased, and possibly other benefit obtained. He keeps the issues open till the cure is completed, that is, until the patient perfectly recovers the use of his legs, or even for some time longer. He likewise thinks it more prudent to heal only one of the sores at first, keeping the other open, until the patient can walk firmly, and without the assistance of a stick; until he can stand quite upright, and has recovered all the height, which the habit, or rather the necessity of stooping occasioned by the distemper, had made him lose.

But though Mr. Pott is of opinion, that the discharge by means of the issue is sufficient to effect a cure, he thinks there is no reason why every assistant means should not be applied at the same time; such as bark, cold-bathing, frictions, &c.

That the patient becomes more erect as his legs become stronger, is certain; and he therefore appears taller, as well as straighter, in proportion as the whole spine strengthens; but whether the curve will always and totally disappear, Mr. Pott has not yet been able to determine with certainty. In two recent instances, both adults, this has been the case; but the deformity, which in weak infants and children is
often

often the consequence of the curvature, and of the state of the spine at that place, must in some degree, he apprehends, be expected to remain. But of this, likewise, he is not yet able to speak with absolute certainty.

From the various observations which Mr. Pott has made on this disease, he draws the following practical inferences.

1. That the disease does not originally consist in a displacement of the vertebræ, made by violence, the bones and ligaments being previously in a sound and uninjured state; but in such a morbid alteration of the texture of both, as will, if not timely prevented, produce curvature and caries, with all their consequences.

2. That the proper remedies for this disease cannot be applied too soon.

3. That the restoration of the spine to its natural figure, depends much on the early administration of the help proposed.

4. That although the distemper may be so far cured, that the patient may perfectly recover the use of his legs, yet such an alteration may have taken place in the bodies of the vertebræ, as to render it impossible for the spine to become straight again.

5. That when three or four, or more vertebræ, are concerned in the curve, the trunk of
the

body will have so little support from that part of the spine which is not distempered, that no degree of deformity can be wondered at; nor can it be expected that such deformity should be removed, whatever other benefit such patient may receive.

6. That if from inattention, from length of time, or from any other circumstances, it happens that the bodies of the vertebræ become completely carious, and the intervening cartilages are destroyed, no assistance is to be expected from the proposed remedy.

To these remarks, Mr. Pott adds, that it appears to him well worth while, to try what a large and free discharge, made for a length of time from the vicinity of the distempered part, might be capable of doing in the very beginning of what are commonly called scrophulous joints; which when arrived at a certain point, baffle all our art, and render a painful and hazardous operation absolutely necessary.

OF WHITE SWELLINGS of the JOINTS.

THE nature of this complaint appears to be less understood, and the cure of it also more difficult, than that of any other disorder to which the body is liable. The term *White Swelling* has commonly been applied to such enlargements of the joints, as are not attended with external inflammation or discoloration of the teguments: the only symptoms which at first commonly take place, being a greater or less degree of swelling, with a deep seated pain. In the progress of the disease, indeed, the surrounding parts are so much affected, that the inflammation is at last communicated even to the skin, in which it is not uncommon to find abscesses and ulcerations around the joints that are so diseased.

There seems evidently to be two different species of white swellings, entirely distinct from each other, and likewise differing greatly in respect to the difficulty of cure.

The first and most simple species of the disease begins with an acute pain, which seems to be diffused over the whole joint, and frequently

quently even extends along the tendinous and aponeurotic expansions of such muscles as communicate with the joint. There is from the beginning a uniform swelling of the whole surrounding teguments, which in different patients is in very different degrees, but it is always so considerable as to occasion an evident difference in point of size, between the diseased joint and that which corresponds with it on the opposite side. Great tension generally prevails, but seldom in this period of the disorder any external discoloration.

From the first commencement of the disease, the patient feels great pain from the motion of the joint. Finding it easiest in a relaxed posture, it is therefore kept constantly bent; which generally, in every situation, but especially in the knee, occasions a stiffness or kind of rigidity in the flexor tendons that are connected with the part.

If the disorder be not carried off at this period, the swelling, which originally was not very considerable, begins gradually to augment. The cuticular veins become turgid and varicose, the limb below the swelling decays considerably in its muscular substance, at the same time that, by becoming œdematous, it acquires an equality

in point of thickness. The pain becomes more intolerable, especially when the patient is warm in bed or otherwise heated, and abscesses arise in various parts.

In all these abscesses, a fluctuation of a fluid, upon pressure, is generally evident, as is the case in every collection of matter not very deep seated. But independent of this fluctuating sensation, all such swellings afford a very peculiar elastic feel, yielding to pressure, at the same time that they do not like œdematous swellings retain the mark.

Those different collections, either upon breaking of themselves, or on being laid open, discharge considerable quantities of matter, which at first is generally purulent, and of a pretty good consistence. It soon however degenerates into a thin fetid ill digested sanies, and has never, at least in proportion to the quantity discharged, any remarkable influence in reducing the size of the swellings. If the orifices whence such matters flow, are not kept open, they very soon heal up, and new collections forming in different parts, break out and heal as before: so that in long continued disorders of this kind, the whole surrounding teguments are often entirely covered with cicatrices, that remain after such ulcers.

Long

Long before the disorder has arrived at this state, the patient's health has generally very much suffered; first, from the violence of the pain, and afterwards from the absorption of matter into the system, which, doubtless always takes place in some degree from its first formation in the different abscesses. But this never appears so evidently till the several collections either burst of themselves, or are laid open by incision; when a quick pulse, night-sweats, and a weakening diarrhœa, never fail to supervene, and which generally at last carry off the patient, if neither the member be amputated, nor a cure be performed.

In the more inveterate, or scrophulous species of white swelling, the pain is commonly very violent, and instead of being diffused, is more confined to a particular spot, most frequently to the middle of the joint. At first, the swelling is commonly very inconsiderable, insomuch that, on some occasions, even when the pain has been exceeding violent, very little difference in point of size can be observed between the diseased joint and the sound one of the opposite side. In this, as in the former species, the least degree of motion always gives great pain; so that the joint being too constantly kept in a bended posture,

posture, a rigidity and stiffness of the tendons are soon produced. As the disorder advances, the pain and swelling become more considerable, accompanied with an evident enlargement of the ends of such bones as compose the joints. The tumor acquires that elastic feel formerly taken notice of; varicose veins appear over its surface, and collections of matter occur in different parts. Those, upon bursting or being laid open, discharge considerable quantities, sometimes of a purulent-like matter, but more frequently of a thin fetid stuff; and if a probe be introduced, and can be passed to the bottom of the sores, the bones are generally found carious. On the farther continuance of the disorder, the constitution is impaired, as in the former species of the disease; a diarrhœa, with night-sweats, commences, and the patient is soon reduced to the lowest state.

In regard to the causes of this disorder, those of the former or rheumatic species may be reckoned all such strains as particularly affect the ligaments of the joints, so as to produce inflammation. Likewise bruises, luxations of the bones, and, in short, every affection which can, in any degree, be attended with that effect.

The

416 MODERN PRACTICE

The latter species of the disease seems to be originally an affection of the bones; the surrounding soft parts appearing to suffer in the progress of the complaint only from their connexion and vicinity. This species of white swelling very seldom occurs in consequence of any external accident; but generally begins without any sensible cause. It is likewise observed, that this species of white swelling is generally either attended with other evident symptoms of scrophula subsisting at the time, or that the patient in an earlier period of life, has been subject to that disease; or that he is descended of scrophulous parents, and therefore probably has the seeds of the disease lurking in his constitution.

In order the better to discriminate those two species of the disorder, it is necessary to observe, that the pain in the white swelling from a rheumatic disposition, is, as was formerly remarked, diffused over the whole joint, and, on some occasions, extends even a considerable way along the muscles that are attached to it; while, in the other species of the disorder, the pain is not only always at first, but sometimes, even when the complaint has been of considerable standing, confined to a very small circumscribed

circumscribed space. In the former, the swelling is always confined to the soft parts, and is from the beginning quite evident. But in the latter, there is seldom for some time any perceptible swelling, and when it becomes apparent, the bones are found to be the parts chiefly affected, the surrounding teguments being affected only in the farther progress of the disease.

These are the chief local differences of the two species of this disorder; but some assistance in the distinction may likewise be obtained, from the general habit of the patient, and from the manner in which the complaint may seem to have been produced.

The rheumatic white swelling being always at first of an inflammatory nature, great benefit is commonly obtained from due attention to a proper antiphlogistic course.

The first remedy to be used for this purpose is blood-letting. But instead of general evacuations from the arm or elsewhere, it always proves more advantageous to take the blood immediately from the part affected. Cupping and scarifying is here a principal remedy, and greatly preferable to leeches. The instruments should be applied to each side of the diseased

joint, and at least eight or ten ounces of blood be discharged. The operation should be repeated at proper intervals, once, twice, or oftener, according to the violence of the symptoms, and the state of the patient's strength at the time.

Upon the anterior part of the joint where the cupping-glasses have not been placed, a small blister ought to be directly applied, and the part kept open with issue ointment, till the wounds from the scarificator are so far healed, that a vesicatory may likewise be laid on one side of the joint; and so soon as that is nearly healed, the other side should be also blistered.

By thus alternately applying them, almost a constant stimulus is kept up, which, in deep seated inflammations, seems to have a greater effect than all the discharge occasioned by blisters.

Gentle cooling laxatives, at proper intervals, are here also of advantage; and the patient ought to be kept on a strict antiphlogistic course.

It is only in the first stages of the disease, however, as Mr. Bell remarks, that the above-mentioned treatment can be of service; and

in such, he is convinced from experience, that it has frequently been a means of curing disorders, which otherwise would probably have proceeded to the last stages of white swellings.

The original inflammatory affection being once corrected, those drains seem to have little or no influence, and ought not then to be long persisted in, as tending to prevent the use of other remedies, which, in an advanced state of the disease, commonly prove more efficacious.

When the inflammation is mostly gone, and there are yet no appearances of the formation of matter, Mr. Bell informs us that he has sometimes observed great benefit from mercury, not given so as to salivate, but to affect the mouth gently, and to keep it somewhat sore for a few weeks. The best form of using mercury in such cases, he thinks, is certainly by way of unction, as it allows, at the same time, of the application of friction, which, in all such swellings, may of itself be in some measure, considered as a remedy. For this purpose an ointment of quick-silver and hog's lard should be prepared, but with so small a proportion of the former, that the patient may admit of two drachms of the ointment

being rubbed in, three times a-day. In order to introduce that quantity of the ointment with gentle friction, at least an hour each time is necessary.

Gentle mercurials given internally are here likewise sometimes of use; but unction is certainly preferable, on account of the friction with which it is accompanied.

For swellings of this kind, Le Dran, and other French writers have recommended falls of warm water. Mr. Bell has known cold water frequently used in the same manner, and, on some occasions, with advantage.

For removing the stiffness that accompanies white swellings, and which much oftener proceed from the contracted state of the flexor tendons than from any other cause, the best application is pure olive-oil used warm. Mr. Bell advises that as much of it as can be easily rubbed in by an hour's gentle friction, should be regularly applied at least three times a-day, and instead of confining the friction altogether to the rigid tendons, as is commonly done, it should be extended over the muscles, even to the insertion of their extremities.

Hitherto we have supposed the disorder not so far advanced, as to have occasioned the formation

tion

tion of matter; for when it has arrived at this height, no great advantage can be expected from any of the remedies above recommended. Even in such a state of the complaint, however, amputation should as much as possible be avoided, and never be had recourse to, until every probable means of saving the limb has been tried in vain. But when the disease is so far advanced as to have destroyed the capsular ligaments of the joint, and perhaps even the cartilages and bones, amputation is then doubtless the only resource.

In the scrophulous species of white swelling, there is very little hope of a cure. If ever this can be effected, it must be by the long continued use of such medicines as are adapted to scrophulous constitutions. In such a case, even amputation can hardly be expected to prove of lasting advantage; and if the operation be determined against, it then becomes necessary to have recourse to palliatives. With this view, opiates in large doses, by moderating the pain and procuring rest to the patient, will, in general, be found the principal remedy.

Of the SECTION of the SYMPHYSIS
of the PUBES.

SO early as the time of Hippocrates it was observed, that in pregnant women, the bones of the pelvis gradually separate from each other, by a dilatation of the substance which connects them. But though the justness of this remark has been repeatedly admitted by anatomical writers, it has not till lately been rendered subservient to any useful purpose in the practice of the obstetrical art. The person entitled to the honour of this invention is Mr. Sigault, a French physician, who, in 1768, proposed the section of the symphysis of the pubes as a substitute for the Cæsarian operation, so often productive of the most fatal consequences; and the utility of this practice was exemplified three years ago in the case of Mrs. Souchot, on whom he made the experiment, in conjunction with Mr. Le Roy.

Mr. Le Roy informs us, that he has performed the section of the pubes upon dead subjects,

subjects, both male and female. In the former he observed a separation of between two and three lines space, and in the latter from three to four; but in those who died in child-bed, he constantly gained from six to nine lines.

F I N I S.



